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East Indian Lopez Root (a Febrifuge).

We have just received, through the kindness of Mr. David Hooper, Government Quinologist at Ootacamund, India, a copy of the first volume of the "Materia Medica of Madras," by Mohideen Sheriff Khan Bahadur. The latter, well known through his Supplement to the Pharmacopœia of India, had been engaged for a number of years as physician to the Triplicane Dispensary at Madras, and had set himself the task, for which his earlier training and long official experience appear to have peculiarly fitted him, to subject the more important native drugs to careful trials upon the sick, so as to establish a record of the medicinal properties of each, independent of any statements previously made regarding each by other observers, whether ancient or recent. Unfortunately, his plan was interrupted by being retired from the service owing to enfeebled health. However, he managed to prepare a portion of the work for the press, but did not progress further than the natural order of Leguminosæ, of which only *Acacia Arabica* and *Acacia Catechu* are included in his work, the editorship and completion of which were undertaken by Mr. David Hooper.

Among the articles contained in this work we find one on *Toddalia aculeata*, or Lopez root, which has recently again attracted some attention among therapeutists. Since the information given by Mohideen Sheriff on this subject is quite interesting and well digested, we give the article in extenso, hoping that the extraordinary claims made for the drug as a most efficient febrifuge, even in obstinate cases, may be thoroughly investigated.

Name.—*Toddalea aculeata* Pers.

Habitat.—Common in the jungles of Southern India, particularly on the Coromandel and Malabar coasts, and the Nilgiris.

Part Used.—The root bark.

Synonyms.—Bark of the Indian Lopez Root. [Native names are given by the author, but omitted here.]

Local Sources.—One of the cheapest drugs in the local market.

Price.—Wholesale, 2½ rupees per maund [a Madras maund is equal to 24$\frac{11}{16}$ avoirdupois pounds]. Retail or "bazaar," 2 annas per pound [1 rupee = about 48 cents; 1 anna, or $\frac{1}{16}$ rupee, = about 3 cents].

Physiological Actions.—Antiperiodic, antipyretic, diaphoretic, carminative, and tonic.

Therapeutic Uses.—The root bark is of the greatest service in all the varieties of idiopathic and uncomplicated intermittent, remittent, and simple continued fevers, and also very useful in atonic dyspepsia and in debility from whatever cause.

Preparations.—Decoction, tincture, watery extract, and simple powder. *Decoction:* Take of the root bark, in coarse powder, 6 ounces; water, 2½ pints; boil on slow fire till the liquid is reduced to 1 pint, and strain when cool. *Tincture:* Take of the root bark, in coarse powder, 6 ounces; proof spirit, 1 pint; macerate for seven days in a closed vessel with occasional agitation, filter, and add more spirit to make 1 pint. *Watery extract:* Take of the root bark, in coarse powder, 1 portion; water, 6 portions; boil till the liquid is reduced to one-third; strain the latter through cloth while hot, and evaporate it on a sand bath [water bath?] to the consistence of an extract. *Simple powder:* The root bark pulverized in the ordinary way (after scraping off the corky epidermis), and passed through a fine sieve or cloth.

Doses.—Of the decoction, from 2 to 6 fluidounces; of the tincture, from 2 to 4 fluidrachms; of the watery extract, from 40 to 80 gr.; and of the simple powder, from 1 to 2 drachms.

European Drugs for which they may be Substituted.—For quinine and other alkaloids of cinchona, as an antiperiodic; for Warburg's tincture, antipyrine, antifebrin, phenacetin, and Pulvis Jacobi, as a diaphoretic and antipyretic; and for gentian and calumba, as a tonic.

Remarks.—I have been using the root bark of *T. aculeata* in my practice during the last twelve or thirteen years, and do not hesitate to say that it is one of the most valuable drugs in India. It is antiperiodic and antipyretic, equal, if not superior, to quinine and other alkaloids of cinchona and to Warburg's tincture respectively; and as a diaphoretic decidedly more efficacious than Pulvis Jacobi, or James' powder, and a few other antipyretic medicines mentioned above. It therefore demands an especial notice of the medical profession.

The root and root bark are sold together in the bazaars of Madras, but the former can be easily removed, it being generally in a very small proportion. The root bark occurs in hollow pieces, varying in length from 2 to 5 inches, and in thickness from ¾ to 1½ lines. It is more or less flexuous, often partially quilled, and covered with a yellowish corky epidermis. It possesses no particular odor, but is bitter in taste. In the fresh state it is aromatic and pungent and has an odor of citron.

Of all the preparations of this drug above described, the tincture and decoction are the most useful, and the rest (the extract and powder) are inferior and unsatisfactory in their action. I make the tincture and decoction very strong, and this, together with the very large doses in which I use them in my practice, is apparently the chief cause of their great success in my hands.

Six drachms of the tincture or 12 ounces of the decoction of *T. aculeata* are equal to one bottle of Warburg's tincture; and if either of them is used in two doses during the presence of simple continued fever, or paroxysms of ague, it produces the same good effect as the latter drug (Warburg's tincture), namely, a copious perspiration and

relief of the febrile condition; and, again, if the tincture or decoction is repeated in the same dose during the interval of ague, every fourth or fifth hour for two or three days, it prevents the return of paroxysm as successfully as very large doses of quinine. To render the cure more perfect and complete, the tincture or decoction should be continued in smaller doses for four or five days more. The beneficial influence of the tincture or decoction of *T. aculeata* in remittent fever is precisely the same, and the only difference is that it sometimes relieves the exacerbation and checks its return at once; and at others it first converts the remittent into intermittent fever, and then cures the latter in the same way as explained above. Out of the many severe and very obstinate cases of malarious, jungle, and other fevers which yielded to this drug, there were several in which quinine with arsenic was first tried and failed. As the dose of the tincture of *T. aculeata* is much smaller than that of its decoction, and as it can also be prepared and kept always ready for use, it is preferable to the latter; but there is no difference whatever between the medicinal properties of both preparations.

The root bark of *T. aculeata* is not only much cheaper than quinine and Warburg's tincture, but it is also one of the cheapest drugs in Southern India, its price being only about 2 annas per pound. In addition to this, its advantages over quinine are that it, unlike the latter, can be freely and successfully administered in the absence as well as in the presence of fever; and that, however long and frequently it may be employed, it never produces ringing in the ear, deafness, and some other disagreeable symptoms which are so commonly observed in the use of quinine.

The analogy between the medicinal properties of the root bark of *T. aculeata*, and those of the root of *Berberis Asiatica* and some other species of *Berberis*, is very great. The former, however, has one advantage over the latter, which is its procurability in every large bazaar of Southern India; whereas the Indian barberry root requires to be sent for from some hills and distant places, as the Nilgiris, Shevaroy Hills, Calcutta, Delhi, etc.

Notes on East Indian Sandalwood.

THE following notes are taken from Part V. of the Pharmacographia Indica (by William Dymock, C. J. H. Warden, and David Hooper), which has just reached us. The notes are partly derived from a report rendered by Mr. C. E. M. Russell, Superintendent of Forests in Mysore:

Sandalwood is the most important source of forest revenue in Mysore. It is a monopoly of the Mysore Government, and, except by Government agency, no sandal tree can be uprooted or cut down, even upon land which is private property. The only exceptions are the Jahgidar of Yelandur and the Guru of the Sringeri Matt, who are permitted to cut and dispose of the sandalwood of their own Jahgirs. The tree is plentiful in the Mysore country, and occurs also, but in far less quantities, in those portions of the Madras territory which border upon Mysore. For practical purposes, however, Mysore may be said to almost hold the monopoly of the sandal supply. It is a somewhat delicate tree, is killed outright by fire, is very impatient of injuries to the roots and bark, and requires shade and protection while young. The value of the wood is dependent upon a volatile oil which is contained in the heartwood only, and in order that this oil may be developed in the highest possible degree it is necessary that the growth of the tree should be slow. Consequently sandalwood grown in arid situations, on poor, stony soil, is, though small, of far more value than is that produced by large, well-grown trees growing in moist situations and in richer soil. The maturation period of the sandal tree is variously stated at from forty to sixty years. Sandalwood is not eaten by white ants, and its oil preserves it from decay in a remarkable degree, of which the present collection of old sandal roots left in the ground for many years past is a conclusive proof. In former times it was the custom not to uproot but to fell sandal trees, whereas for many years past the trees have been uprooted, and the roots, which contain a higher percentage of oil than the wood, are in great demand and command high prices.

Even in periods of depression of the sandal market a fair demand for roots has always been noticeable. The method of preparation is as follows:

The trees, having been uprooted, are roughly deprived of bark and some of the sapwood on the spot, and are then carted into the nearest of the sandal Kothis, of which nine exist in the Mysore province.

On arrival at the Kothis the trunks are sawed off above the roots, cut into lengths, all the whitewood removed, the billets adzed and subsequently planed and smoothed, the roots adzed and freed of all adhering bark, mud, and whitewood, and the various products—billets, chips, small pieces, hollow wood, saw powder, etc.—collected and classified according to the classes represented by the specimens forming the sandal trophy. About the months of November or December auction sales of the various classes are held in all the Kothis of the province, and are so arranged, as regards the dates fixed for holding the same, that purchasers may, if they choose, attend the sales in Shimoga, Kadur, and Hassan, and yet be in time for those in Mysore and in Bangalore.

Chief Markets for Sandalwood.—It will be matter for surprise that so valuable a wood, and one of which a single province may almost be said to hold the monopoly, should be so little known outside of India.

The fact is that the trade in Mysore sandalwood has hitherto been confined to a ring, consisting chiefly of Mohammedan Seits, who, either as principals or as agents of Bombay firms, attend the local sales and send the sandalwood purchased by them to Bombay. The transit to Bombay from the coast is by sea in native crafts The railways might perhaps secure this traffic if they offered special rates.

The carts that convey the sandalwood to the coast are hired at low rates, as they are certain of return loads of salt and other merchandise to Mysore. Until recently nearly all the sandalwood sold in the auctions held by the Mysore Government went to Bombay, but a demand having lately arisen for sandal oil for medicinal purposes, some direct shipments of wood for extraction of oil to France and Germany, and probably also to America, have been made.

A small quantity of sandalwood is produced in the Madras Presidency and in the Bombay districts of North Canara and Dharwar.

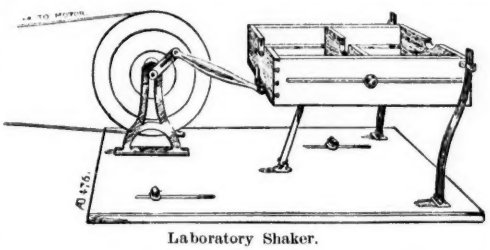
Sandalwood Oil.—The Mysore Government has long had establishments for extracting the oil, which is sold at the annual auction along with the wood, and chiefly bought up for exportation to China and Arabia. It is procured from the wood by distillation, the roots yielding the largest quantity and finest quality of oil. The body of the still is a large globular clay pot with a circular mouth, and is about 2½ feet deep by 6½ feet in circumference at the bilge. No cap is used, but the mouth of the still, when charged, is closed with a clay lid having a small hole in its centre through which a bent copper tube about 5½ feet long is passed, for the escape of the vapor. The lower end of the tube is conveyed inside a copper receiver, placed in a large porous vessel containing cold water. When preparing the sandal for distillation, the white or sap wood is rejected, and the heartwood is cut into small chips, and distillation is carried on slowly for ten days and nights, by which time the whole of the oil is extracted. As the water from time to time gets low in the still, fresh supplies are added from the heated contents of the refrigerator. The quantity of oil yielded by wood of a good quality is at the rate of 10 ounces per maund, or 2 to 5 per cent. It is transparent and of a pale-yellow color, and has a resinous taste and sweet, peculiar smell, which is best appreciated by rubbing a few drops of the oil on the warm hand. Its specific gravity is about 0.980 (Bidie). The average price in India is about Rs. 8 per pound.

From Mr. Russell's report we learn that recently Messrs. F. Smith, of Bangalore, and W. F. Petrie Hay, of Hunsur, have, with permission, been making experimental distillations. Their samples were clear and good, but it has been brought to notice that the use of iced strainers would be necessary to prevent the oil becoming thick or cloudy when exported to colder regions.

A SIMPLE LABORATORY SHAKER.

MESSRS. W. R. DUNSTAN and J. S. DYMOND recently exhibited a new shaking apparatus at a meeting of the Chemical Society. They have also furnished the following description, which we give after the *Pharm. Journ.:*

It consists of a wooden tray into which can be firmly fixed, by means of a sliding partition, a bottle or other vessel of any size up to that of a Winchester quart. This tray is supported underneath, near the front, by a rod which is capable of moving backward and forward on a pivot. At the back its supports are 2 flexible steel laths, one end of each being clamped to either side of the tray, the other end being firmly fitted in the baseboard of the machine. Motion is communicated by means of a crank and connecting rod. This rod can be attached to the crank at different distances from the axle, so that the extent of the excursions made by the truck may be varied. In order to avoid the necessity of altering the length of the cord which passes from the motor to the wheel, as a means for varying the speed, the wheel is made up of a number of wheels of different diameters, and the baseboard is provided with slots and thumb screws, by means of which it may be securely fixed to the bench at the required distance from the motor, to make the driving belt taut.



Laboratory Shaker.

The shaker may be obtained from Messrs. Baird & Flatlock, Cross street, Hatton Garden, E. C., London. 4761]

Pernambuco Jaborandi.

THE following note on this subject was read by Mr. E. M. Holmes at a meeting of the British Pharmaceutical Society on April 13th:

About seventeen years ago I ventured the opinion that Pernambuco jaborandi was probably derived from an undescribed specie of *Pilocarpus*, more nearly allied to *P. Sellvanus* than to any other known species. Ever since that date I have endeavored, whenever an opportunity offered, to obtain flowers of the plant, but, until this year, without success. About two years ago I saw in the Botanic Garden at Cambridge a specimen of the Pernambuco plant. Last year Mr. Lynch, the curator of the garden, was kind enough to forward me a few blossoms for examination, but this year he has been able to send a flowering branch, from the examination of which I am able to determine that the plant is an undescribed species, for which I propose the name *Pilocarpus Jaborandi*. The plant differs from *P. Sellvanus*, to which it is most nearly allied, in having four pairs of leaflets; in the elliptic-oblong shape of the leaflets and their more fleshy consistence; in the veinlets being more prominent on the upper surface; in the slender glabrous pedicles, only three times longer than the leaf buds; in the minute bracts being situated near the apex of the pedicle; in the rose color of the ovate petals, pedicles, and upper part of the rachis; and in the rugose crenate disc. The calyx is pentagonal, not lobed. I purpose giving a fuller description of the plant on a future occasion. An analysis of the known pinnate-leaved Brazilian species of *Pilocarpus* will be found in *Pharmaceutical Journal* [3], v., p. 641; and a figure of the fruit of the plant, page 582.—After *Pharm. Journ.*

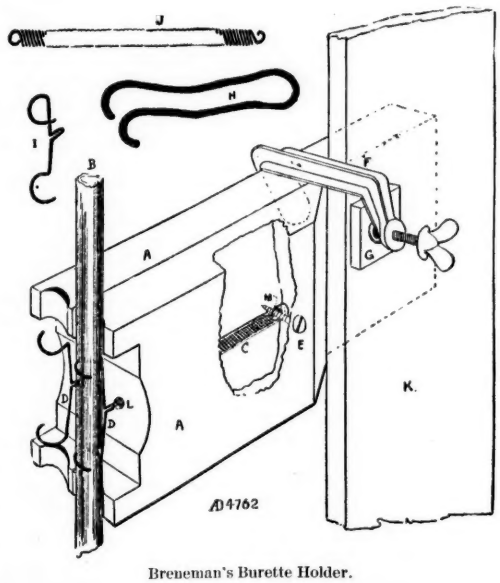
AN IMPROVED BURETTE HOLDER.

MR. A. A. BRENEMAN exhibited a new burette holder at the meeting of the Amer. Chem. Society, held on December 4th, 1891, and quite recently described it in the journal of the Society, as follows:

The burette holder shown in the cut is a modified form of one that I have seen, but of which I do not know the origin. The original features of the present one are the use of a spiral spring, much longer than in the original holder, embedded in a wooden block which can be clamped at will to the upright part of any laboratory shelf, thus dispensing with a stand and leaving the table clear, while not interfering with the use of the shelf; and of the combination of two holders in one, as shown in the cut.

The springs C J, which are 10–12 Cm. long, are made of hard brass wire of about 8 Mm. diameter, coiled as closely as possible. One end, M, terminating in a closed loop, is sunk into a deep longitudinal hole parallel with the axis of the block. The loop is held firmly by a screw which passes through it from the outside. The spring, when not extended, reaches within 1 Cm. of the opening. The stirrup, I, is connected with it by its middle loop, and is then held so as to support even a very small tube within its rings by drawing the tube against the jaws of the block.

The grooves are faced with cork, first glued in place and then shaped with a round file. These are afterwards well rubbed with melted paraffin, as is also the entire surface of the wooden block, thus affording protection against acid or caustic solutions. The wire portions are lacquered or, better, plated with platinum. The rings of the stirrup are bent to an arc of about 250°. The entire block is 23 Cm. wide and 5 Cm. thick. The bevelled portion is 15x10x2.5 Cm.



Breneman's Burette Holder.

The large double hook, H, is an indispensable part of the holder. Introduced at the side of the stirrup, opposite the opening of the rings, it is used to draw the stirrup forward for the removal or insertion of a burette.

The readiness with which burettes can be moved up or down, or rotated with a single movement and with one hand, is a marked advantage of this holder. The superiority of wire over silk or catgut, sometimes used in burette stands, will be apparent, and the clearness of view afforded, as compared with the use of the usual burette clamp, is another advantage. 7 62]

The Origin of Rye.—It was stated by Ascherson in the "Flora of Brandenburg" that the Sicilian *Secale montanum* is the source of the rye actually cultivated, viz., the *Secale cereale*. An important difference between the two plants, however, is the fact that while the former is perennial the *S. cereale* is an annual plant. This objection has now been removed by Prof. Batalin, a Russian scientist, who has observed in the country of the Don Cossacks the rye plant growing during several consecutive years without re-sowing, either natural or artificial.—*Revue des Sciences Naturelles*, April, and *Pharm. Journ.*

Fiji Ginger.

THE following note on Fiji ginger was communicated by E. H. Gane to the *Pharm. Journ.* of March 26th:

Though of not such fine appearance as the Jamaica ginger, yet it (Fiji) was finer than the other two commercial varieties, and was especially remarkable for its exceedingly fine aroma and peculiar pleasant taste, recalling that of lemon. The rhizome had evidently been carefully dried, as was evidenced by the small amount of moisture present. The rhizome is rather more fibrous than the Jamaica, and some of the pieces are heavy and resinous, but otherwise the structure appears similar. Its powder is of a slightly darker color than a fine Jamaica ginger, but about the same color as the commercial article, and therefore much lighter than either the Cochin or African. The fine, lemon-like odor is much more distinct in the powder.

To examine its active constituents the method adopted by Dr. Thresh was followed. A known weight of the rhizome in fine powder was packed in a percolator and exhausted with alcohol. Alcohol was chosen as the solvent, as all the important constituents of the plant were known to be soluble in it. A similar operation was simultaneously carried out on a sample of Jamaica. The resulting tincture of the Fijian was darker, more aromatic and pungent than that of the Jamaica ginger. . . .

Comparing the results of the above two analyses with those obtained from Cochin China and Africa by Dr. Thresh, we have the following figures:

	Jamaica. Per cent.	Cochin. Per cent.	African. Per cent.	Fijian. Per cent.
Volatile oil	0.64	1.35	1.615	1.45
Fatty matter.....	0.92	1.20	1.225	0.86
Resins.....	1.76	1.815	3.775	4.47
Acid and neutral gingerol.....	0.84	0.6	1.45	1.82
Moisture.	13.66	13.53	14.515	11.25
Ash.....	4.53	4.8	4.27	4.06

On comparison it will be seen that the Fijian ginger is by far the richest in active constituents. The amount of volatile oil obtained seems rather low compared with the powerful aroma of the drug, but probably an appreciable amount was lost owing to the method of determination, and more accurate methods would lead to a higher figure.

The Propagation and Curing of Ginger.

THE following two notes on the propagation and curing of ginger in the West Indies are taken from the *Kew Bulletin*, No. 64 (April, 1892). The first note is from Long's "Jamaica," page 700:

Ginger is propagated by the smaller pieces, prongs, or protuberances of the root, each of which throws up two different stems. The first bears the leaves and rises to the height sometimes of 3 feet or upward, but its usual growth seldom exceeds 18 inches. It thrives best in a rich, cool soil, and, therefore, what has been recently cleared from wood is well adapted to the culture of it, more especially as it is supposed to be a great impoverisher of land. In such a soil it grows so luxuriantly that a hard or large spreading root will weigh nearly a pound. It is, however, remarked that what is produced from a clayey, tenacious soil shrinks less in scalding, while such as is raised in richer, free, black moulds loses considerably in that operation. The land intended for the cultivation of it is first well cleaned with the hoe, then slightly trenched, and planted about the month of March or April. It attains its full height and flowers about August or September, and fades about the close of the year. When the stalk is entirely withered the roots are in the proper state for digging. This is generally performed (in Trinidad) in the month of January or February. After being dug they are picked, cleansed, and gradually seethed or scalded in boiling water. They are then spread out and exposed every day to the sun till sufficiently dried, and, after being divided into parcels of about 100 pounds each, they are packed in bags for the market; this is called the *black ginger*. The manner of scalding the roots is as follows: A large pot of copper is fixed in the field or some convenient place, which is kept full of boiling water; the picked ginger, being divided into small parcels, is laid in baskets and plunged alternately into the water, where it is suffered to stay for the space of ten or fifteen minutes; it is then spread on a platform for drying; but care is taken during the process to change the water as soon as it becomes much impregnated with the juices of the root.

The white sort differs but little from the black roots. The difference arises wholly from the methods of curing them. The white is never scalded, but, instead of this easy process, they are picked, scraped, washed one at a time, and then dried, all of which requires too much pains and time for any real advantage to be gained in the properties, though, being made more agreeable to the eye, the price of white is much higher in the market. When the root is intended for a sugar preserve, it is dug while tender and full of juice—the stems at this time rarely exceeding 5 or 6 inches in height—the root is carefully picked, washed, and afterwards scalded till it is sufficiently tender; it is then put in cold water, and peeled and scraped gradually. This operation may last three or four days, during which it is commonly kept in water and the water frequently shifted, as well for cleanliness as to extract more of the native acrimony. After this preparation it is laid in unglazed jars and covered with a thin syrup, which in two or three days is shifted and a richer put in; this is sometimes removed for a third or fourth, but more than three are seldom requisite. The shifted syrups are not lost, for in Jamaica they are diluted with water and fermented into a pleasant liquor called cool drink, with some mixture of the chaw stick, lignum vitæ, and sugar.

The following is from a letter of W. Bancroft Espeut, F.L.S.:

The method pursued in Jamaica is extremely simple. The ginger, being about ten months to a year old from the time of planting, having arrived at maturity, begins to wither, the leaves getting yellow and shrivelled. The roots are then dug up, great care being taken not to *bruise* them. If the epidermis (skin) of the root is injured it discolors the product. After the roots are dug they are carefully trimmed with a sharp penknife, and picked and allowed to dry in the air for a few hours until all the accompanying earth can be rubbed or wiped off with a soft cloth. The cleaned roots are then placed, a few at a time, in boiling water and scalded, and the epidermis is scraped off with a sharpened bamboo like a very narrow, flexible paper knife. As soon as scraped they should be placed in the sun until apparently free from dampness. After this the drying is continued. Gradual drying results in a better product than quick drying—a few hours a day in the morning sunshine and in air-drying sheds, until, after eight to twelve days, the fingers break off sharp and clear. The ginger is then cured and should be sorted, all of one color being kept separate, and large again separated from small. The water used in scalding should be clear and free from iron or excess of lime.

Camphoid: A new Substitute for Collodion for Medical Use.

"IT is known that iodoform is soluble (1 in 10) in Rubini's solution of camphor composed of equal parts by weight of camphor and absolute alcohol"[the original has "dilute" alcohol, which is, of course, a mistake.—ED. AM. DRUGG.] "This requires fixing on the part to which it is applied. I therefore added 1 part of pyroxylin to 40 parts of the solution and found it to dissolve readily.

"Applied to the skin, this preparation dries in a few minutes, and forms an elastic, opaque film which does not wash off. The excess of camphor seems to volatilize, and as it disguises the odor of the iodoform, its solution forms a useful vehicle for applying this drug. Pyroxylin dissolves readily in the simple solution of camphor, and this forms a cleanly basis for the application of many medicaments to the skin, such as carbolic acid, salicylic acid, resorcin, iodine, chrysarobin, and ichthyol.

"I suggest the name 'camphoid' for the simple pyroxyline solution."—WM. MARTINDALE, in *Pharm. Journ.*, April 9th.

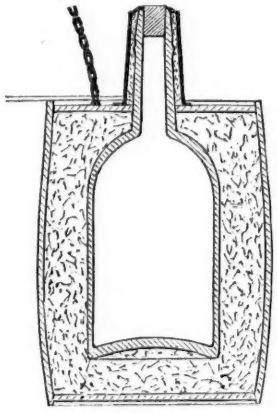
The formula for *Camphoid* would then be as follows:

Camphor	20 parts.
Absolute Alcohol	20 "
Pyroxylin	1 part.

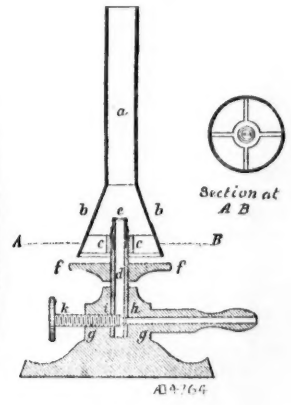
Artificial Salicylic Acid.

MESSRS. HELBING and PASSMORE have just completed an examination of a well-known brand of salicylic acid and its sodium salts, the result of which, as published in *Helbing's Record*, contains several interesting points. The investigators confirm previous observations in stating that the melting point of the *pure* acid is slightly below 157° C.—to be exact, 156.85° to 156.88° C.—and they find that fractionation of the *silver* salt is the quickest and surest means of determining the purity of the acid, since any cresol derivatives which may be present accumulate and come out in the last fractions. In one respect it is a matter of regret that Messrs. Helbing and Passmore were not dealing with a less pure acid than they had, for in the worst sample, melting at 156.4° to 156.75°, the amount of impurity was only about 0.1 per cent, whilst Messrs. Dunstan and Bloch dealt with acids melting at 154° C. and the like. In fractional crystallization with silver, a known weight of the acid is first converted into the sodium salt, and freed from carbonic acid by adding a trace of nitric acid and boiling. During ebullition a 10-per-cent solution of silver nitrate is added in quantity sufficient to precipitate from a tenth to a fifth of the salicylic acid. Silver salicylate is practically insoluble in hot water, and, unlike lead salicylate, has no tendency to the formation of basic salt—a disadvantage which gave Messrs. Dunstan and Bloch much trouble, and to which is probably due the want of regularity in the melting point of their fraction. After the first fractionation with silver, a second, third, and fourth, or even more, may be made, using increased quantities of silver nitrate until 50 or 60 per cent of the acid has been precipitated, and then decreasing the size of the fractions. Much depends upon the initial melting point of the acid; should this be low, it is advisable to keep the larger fractions toward the end, so as to accumulate the impurities in them. The acid is regenerated from the silver salicylate by digestion with boiling water and an excess of hydrochloric acid, the mixture filtered, the salicylic acid crystallized twice and dried. The melting point of each fraction is then determined. In one case Messrs. Helbing and Passmore found four fractions from a "physiologically pure" acid which melted at the same temperature—viz., 156.85° C.—the residue melting at 156.84° C. The sample was, therefore, "chemically identical with the natural acid from oil of wintergreen." As showing the delicacy of this method of testing, we observe that the last fraction of another specimen (7 per cent of the quantity taken) melted at 156.3° C., the others being normal, and the last of another (10.5 per cent) melted at 155.9° C. As Fischer found that the presence of 1 per cent of cresotic acid reduces the melting point of salicylic acid by about 1° C., it is obvious that these last fractions give a very critical indication of quality, especially when the initial melting points only vary from normal by fractions of a degree. It is here that Messrs. Helbing and Passmore have done good service; for while Messrs. Dunstan and Bloch stated that they obtained the best results by silver fractionation, they gave no figure for guidance, and these latter results show that silver fractionation insures true separation of salicylic acid from its objectionable contaminants. Another point brought out by the investigation is that sodium salicylate in crystals is anhydrous, or practically so, the loss on drying at 104° C. being only 0.24 per cent, the British Pharmacopœia formula ($NaC_7H_5O_3$) requiring 5.03 per cent. The loss of scale salicylate was 0.23 per cent and of powder 0.19 per cent. The obvious conclusion is that sodium salicylate does not contain water of crystallization, the little which is present being mechanically retained after drying.—From an editorial in *Chem. and Drugg.*, April 23d.

[*Note by Ed. Amer. Drugg.*—Though the method of fractionating salicylic acid (so as to separate it from contaminations) by converting it into a silver salt is very interesting theoretically, yet we doubt its practicability either for manufacturing purposes or for testing the commercial acid. Manufacturers work with such large quantities of salicylic acid at a time that they will not be willing to employ an expensive chemical as a means of purification. The judicious application, careful recovery, and reconversion into reagent form of the silver would certainly entail a considerable expense, more than would be made up by the prospective sale of a purer product. As to the employment of the melting point as a test of purity in the Pharmacopœia, this is impracticable for the simple reason that melting-point determinations, in general, can only be relied upon when the operator is thoroughly skilled in the process, possesses a thoroughly reliable, standard thermometer, and is able to apply the requisite corrections for barometric pressure. The difference in the melting points of pure salicylic acid and the foreign acids which have occasionally been found to accompany it is so small, comparatively speaking, that it could not be determined with any sort of trustworthiness by the thermometers usually available to pharmacists.]



Pressure Gauge.



Teclu's Gas Burner.

PRESSURE GAUGE.

A NEW pressure indicator or safety gauge has been devised and patented by Fr. Lux, of Ludwigshafen-on-the-Rhine, having the form shown in the accompanying cut. It is to be filled with mercury, and on the top of this, in the lateral tube B, a specifically light liquid is poured, which, when it rises into the contracted part at C, indicates the fluctuations of pressure in a magnified degree. 4763]

A NEW LABORATORY BURNER.

NICOLAS TECLU has endeavored to overcome the defects still existing even in the most recent modifications of Bunsen's burner, and believes he has accomplished his object with the introduction of the burner here illustrated.

It is not necessary to explain every detail, since the illustration is sufficiently plain. We will only state that the main object of the designer was, *first*, to be able to control the influence of gas, irrespective of the stopcock with which the burner is connected by rubber tubing; and, *second*, to regulate to a nicety the quantity of air requisite to produce a purely blue flame. The first object is accomplished by means of the screw *k*, which controls the influx of gas. The second is fulfilled by the disc *f f*, which may be screwed up or down on the burner tube *d*. When it is in the position shown by the cut, screwed down so as to admit air into the conical chimney *c c*, the gas issuing from *e* will receive an abundant supply of air,

and sufficient draught will be created to render the flame almost equal to a blast. By screwing up the disc the air supply and draught are diminished. It is thus possible to produce anything between a minute crucial flame and a blast.—After *Journ. f. präkt. Chem.*, 1892 (vol. xlv.), page 281.

[*Note by Ed. Amer. Drugg.*—This burner is already kept in stock by the leading importers of chemical apparatus.] 4764]

Reactions of Cocaine.

THE following paper by Mr. J. C. Stead was read at a meeting of the London Chemists' Assistants' Association on April 21st:

In reply to the query, "What is the best chemical test for cocaine salts?" I can only enumerate the characteristic reactions of cocaine salts generally, and describe some of the tests which have been proposed for their identification.

The aqueous solutions of the freely soluble salts of cocaine are precipitated as follows by—

Carbonates and hydrates of ammonia, the alkalies and alkali earths	White
Borax	White
Picric acid	Yellow
Tannin in the presence of hydrochloric acid	White
Mayer's reagent	White
Thresh's reagent	Brick-red
Iodine	Brick-red
Stannous chloride	White
Gold chloride	Pale-yellow
Platinic chloride	Yellowish flesh
Mercuric chloride	White

They are not precipitated by bicarbonates or tannin.

With the ordinary color reagents for alkaloids—viz., sulphuric acid, sulphuric acid with nitric acid, sulphuric acid with sugar, sulpho-molybdic acid, nitric acid, hydrochloric acid, sulphuric acid and potassium bichromate, and ferric chloride—the alkaloid or its salts give no characteristic reaction. It has been stated that with the sulphuric acid and bichromate test cocaine gives a dirty pink, but with this I have not been able to obtain any distinct coloration.

The following are some of the characteristic reactions of which notices have been published from time to time as being useful for the identification of the alkaloid. Cocaine treated with an alcoholic solution of potassium hydrate yields ethyl benzoate with characteristic odor.

Prof. Flückiger, in a paper published in the *Pharmaceutical Journal* of March 20th, draws attention to the fact that if cocaine or its salts be heated with sulphuric acid, specific gravity 1.84, white, acrid vapors are given off which on cooling deposit crystals of benzoic acid. This reaction, he states, may be performed with minute quantities of the alkaloid.

Schell remarks that a mixture of cocaine hydrochloride and a small quantity of mercurous chloride (calomel), moistened or simply breathed upon, blackens. Atropine gives the same result, but only on heating. The alkaloid cocaine does not answer to this test, but only its hydrochloride.

Vitali proposes a test which consists in dissolving the alkaloid in 0.5 to 1.0 Cc. of sulphuric acid in a porcelain capsule, and adding potassium or sodium iodate or iodic acid in the proportion equal to three times the weight of the cocaine, when on slightly heating on a water bath light green streaks appear, then a grass-green coloration, and last a dark blue.

There is a test proposed by De Silva, which was commented upon by Mr. Stark at a meeting of the association last session. It consists in evaporating to dryness on a water bath a solution of a minute portion of cocaine or one of its salts in nitric acid, specific gravity 1.4, and then treating the residue with an alcoholic solution of potash, when an odor similar to that of peppermint is developed. Mr. Stark, in his note, mentioned that he tried this test with atropine, sabadilline, pilocarpine, cinchonine, eserine, veratrine, brucine, codeine, delphinine, narcotine, quinine, strychnine, and quinidine, none of which yielded a result similar to that of cocaine, though he thought that the odor of the product from the latter suggested citronella rather than peppermint, and was not distinctive enough to render the test reliable. The odor that I have obtained with this test is similar to that produced on treating cocaine with alcoholic potash. The product appears to be ethyl benzoic ether.

Mezger has suggested the following for the detection of cocaine in the presence of other bases: Cocaine hydrochloride, 0.05 Gm., dissolved in 5 Cc. of water, and 5 drops of a 5-per-cent solution of chromic acid added. A distinct precipitate is formed on the addition of each drop, which, however, immediately dissolves. If now 1 Cc. of strong hydrochloric acid is added, a heavy yellow precipitate of cocaine chromate is formed.

Müller also remarks that potassium bichromate precipitates the alkaloid from neutral solutions, while the normal chromate does not and so serves to distinguish cocaine from other alkaloids. I have tried these chromate tests with aconitine, apomorphine, atropine, bebeerine, brucine, caffeine, cinchonine, cinchonidine, codeine, colchicine, emetine, gelsemine, hyoscyamine, morphine, pilocarpine, physostigmine, narceine, strychnine, and veratrine. Of these, gelsemine, strychnine, and veratrine behave very similarly to cocaine, so that with them the test is negatived; but with the remainder the reactions are distinct from that of cocaine.

Giesel, in 1886, proposed the following reaction for identifying cocaine: If 0.01 Gm. cocaine hydrochloride is dissolved in 1 to 2 drops of water, and about 1 Cc. of a 3-per-cent solution of potassium permanganate added, a violet precipitate is produced at ordinary temperatures. Lyons remarks that with a solution containing less than 1 per cent of cocaine, crystals are only formed on evaporation.

In using this test I find that with aconitine, bebeerine, brucine, quinine, colchicine, cinchonine, emetine, gelsemine, codeine, morphine, physostigmine, pilocarpine, strychnine, veratrine, narceine, cinchonidine, and apomorphine the reduction of the permanganate is immediate or occupies but a few minutes, whilst with hyoscyamine, atropine, and caffeine an indifference equal to that with cocaine is observed, but no precipitate of the permanganate of the alkaloid is formed. This is, in my opinion, one of the best tests for cocaine as yet published.

There are some other tests, which I have not referred to because they are either useless or they do not admit of their use by the pharmacist with facility.

Prevention of Bumping in Boiling Liquids.

WHEN the presence of a heavy precipitate occasions bumping, it is only requisite to keep it in suspension by mechanical means or by rapid ebullition to stop the bumping. Excluding cases of this kind, bumping may take place in *homogeneous* liquids of alkaline, acid, or neutral reaction, and is due to the practical absence of air or gas from the liquid. Again, bumping takes place when *non-homogeneous* or immiscible liquids are attempted to be boiled or distilled together. However diverse these classes may appear, the ultimate cause of the bumping, I believe, is identical, so that preventive means ought to be equally efficacious in homogeneous or non-homogeneous liquids.

The only rational method for preventing bumping is to aërate the liquid; but the usual method of effecting this, by bubbling air or gas through the bumping liquid, is only of occasional benefit, and often worse than useless. Aëration, with its consequent prevention of bumping, is best accomplished by the slow and minute evolution of some gas insoluble in the liquid under operation. This can be elegantly accomplished in all cases where the liquid is an electrolyte by passing a current of electricity through it. The battery wires, which terminate in thin platinum wires, may be introduced inside a piece of glass tube, the end being fused so that only the platinum wires (1 inch long) are in contact with the liquid.

The same slow and efficient aëration may be also accomplished by the introduction of some substance, best in fine powder, which will interact with the liquid and slowly evolve gas. For this purpose many metals may be employed, *e.g.*, zinc dust is widely applicable, evolving

hydrogen in acid, alkaline, aqueous, and alcoholic solutions.

The addition of a minute quantity of zinc dust, when estimating NH_3 by expulsion with NaHO, completely prevents all bumping. As in this case regard must be taken of the action of zinc on nitrate and nitrate-free NaHO used, so in all cases the secondary reactions must be carefully considered.

Methylated spirit, which can scarcely be used now without purification, distils quietly from all sorts of mixtures (as when recovering) on the addition of a little zinc dust.

Again, when it is attempted to distil mixtures of oil and water, or tar and liquor, recourse is generally had to heating and separating to get rid of as much liquor as possible before a troublesome distillation begins. However, by the simple addition of a grain or two of moistened zinc dust mixtures of oil and water or liquor, in all proportions, may be distilled quietly in a flask of little more than double the capacity of the mixture taken. If necessary, the addition of zinc may be repeated, and if the solution is purely aqueous a minute quantity of alkali may be added with benefit, if permissible.

These examples will suffice to show how the principle may be employed in any case.—GEORGE CRAIG in *Chem. News*, May 6th.

Note on Citric Acid.

EDWARD BUCHNER, of Munich, and his assistant H. Witter, have discovered that *anhydrous* citric acid, even when it is dissolved in water and recrystallized, always separates in an anhydrous condition.

Anhydrous citric acid is best obtained by evaporating the aqueous solution of the crystallized acid, containing 1 molecule of water, until the temperature has risen to 130° C. On cooling, the anhydrous acid separates in colorless crystals having the melting point 153° C. This shows that the hydrated acid is converted, at 130° C., into the anhydride, even in the presence of water.

If a crystal of hydrated citric acid is introduced into a concentrated aqueous solution of the anhydrous acid, a crop of crystals of the hydrated acid will separate. On the other hand, however, if a crystal of the anhydrous acid is introduced into a concentrated solution of the hydrated acid, the crop of crystals formed will not be anhydrous, but again the hydrated acid.

Both the hydrated and the anhydrous citric acid, when heated with methylic alcohol and hydrochloric acid, yield the same methylic citrate, melting at 78°–79° C. On saponifying this by boiling with sodium hydrate next preparing the lead salt of the regenerated citric acid, and removing the lead by hydrogen sulphide, on evaporating the solution in vacuo the *anhydrous* citric acid will always be obtained, no matter which of the two acids has been used as a starting point. If, however, hydrated citric acid is converted into a lead salt, and this then decomposed with hydrogen sulphide, the hydrated acid will be again obtained.

Chemical text books usually contain the erroneous statement that hydrated citric acid melts at 100° C. This is wrong. Citric acid begins to shrink when heated to between 70° and 75° C., a portion of the water being then lost. When further heated it undergoes but little change, until a temperature of 135° C. to 152° C. is reached, between which it becomes anhydrous and melts, the melting point being the lower the more rapidly it is heated.

Opium for Smoking.

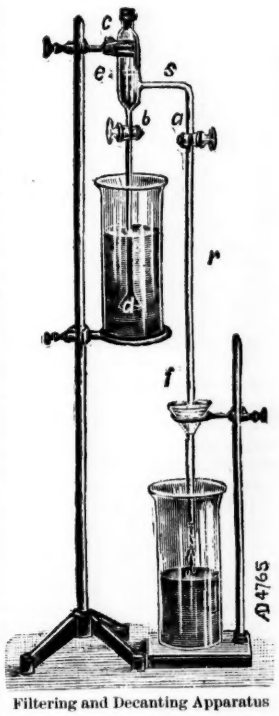
A VERY important discovery has been made by M. Calmette, of the Laboratory of Microbiology at Saigon, in regard to the fermentation process through which opium must go before it acquires the flavor which smokers are so fond of. This fermentation is due probably to various organisms, but the very best opium has only the *Aspergillus niger* about it, and success has been attained in cultivating this organism. The effect of the *Aspergillus* upon the opium is to convert the contained tannin into gallic acid, which under suitable conditions it does in ten days, whereas the old-fashioned method of self-fermentation and heating takes months or years. Opium prepared in the new way has been submitted to smokers, experts, who stated that it had the qualities of old opium already some years of age. The complete results are published in a recent issue of the *Revue Scientifique.—Chem. and Drugg.*

[*Note by Ed. Am. Drugg.*—We quote the above with the remark that we do not see how tannic acid gets into the opium. Opium contains no tannic acid, or should contain none.]

A NEW FILTERING AND DECANTING APPARATUS.

THE apparatus here described was designed by William Saulmann for saving time in the operations of decanting and filtering.

When it is to be put to use stopcocks *a* and *b* are closed and funnel tube *e* filled (through the orifice *c*) either with distilled water or with other liquid, as the case may require. The stopcock *b* is then opened a moment, so as to allow the tube below the stopcock to be filled with water. The same is done with stopcock *a*. When the siphoning is to be started the liquid in *e* must, of course, stand higher than the lateral tube *s*, and the stopcock at *c* must have been inserted. The filter having been placed in the funnel *f*, stopcock *b* is opened full and *a* just far enough to cause the liquid in the filter to remain at a constant level, or else the quantity is so regulated that less flows upon the filter than is discharged from it. This will enable the operator to keep the apparatus going over night.—After *Chemiker Zeit.*, No. 12. 4765]



Filtering and Decanting Apparatus

Volumetric Estimation of Albumin in Urine.

FRANCESCO VENUROLI has found that if mercuric chloride is added to albuminous urine containing a minute quantity of iodide of potassium and acidulated with acetic acid, no precipitate of red mercuric iodide is produced until all the albumin has been precipitated. Upon this he bases a method of determining albumin volumetrically.

A solution of mercuric chloride is prepared containing 1 part of $HgCl_2$ in 100 parts of water. Each cubic centimetre of this corresponds to 0.0245 Gm. of albumin. This value was ascertained by determining the albumin gravimetrically, which, of course, is a much more tedious operation. Five Cc. of the [clear] albuminous urine are put in a small beaker, together with 6 Cc. of a 5-per-cent aqueous solution of iodide of potassium and 1 drop of acetic acid. From a burette divided into $\frac{1}{10}$ Cc. the mercuric solution is added drop by drop, under stirring, until the yellowish-red tint due to the formation of mercuric iodide makes its appearance. From the volume of mercury solution 1 Cc. is deducted, because this is consumed by an equivalent quantity of iodide of potassium. The remaining cubic centimetres of mercury solution are then multiplied by 0.0245, and the product represents the quantity of albumin present in the 5 Cc. of urine.

If the urine contains alkaloids these would be precipitated also, and the result, therefore, vitiated.—*Orosi*, 13, 255.

Notes on Betel.

THE following notes on betel (or betle) are taken from the Pharmacographia Indica, by Dymock, Warden, and Hooper (part v., page 186):

The betel garden (*pán-mala*) is a work of art. The best site is the well-drained alluvial bank of a river or stream. The vine is rather fond of an iron soil, but lime, salt, and soda are fatal to it. The well must last throughout the year, and be no more than 40 feet deep, otherwise the cost of raising the water eats up the greater part of the profits. The betel leaf, it is said, cannot be grown from channel water, which is very cold. After the site has been chosen, the next point is to fence it from cattle, thieves, and strong winds. First is an outer line (*kumpan*) of substantial wickerwork, split bamboos, zizyphus twigs, or other pliable material Inside of this fence is a thick milk bush (*Euphobia neriifolia*) hedge. Then comes a belt of the large castor plant, and, last of all, a row of plantains. The garden is laid out in an unvarying pattern. The whole, crossed by water channels and roads, forms beds of different shapes and sizes. Each bed —known by a particular name, such as the *cheritang*, the *bertang*, and the *váfa*—is stocked with a certain number of vines, so that the outturn and other particulars of a garden can be calculated with great nicety. After the ground has been laid out and properly levelled, tree seeds are sown for the vines to train on. Round the edge of each bed is a line of *shevri* (*Sesbania ægyptiaca*), and in the centre, from 2 to 3 feet apart, the seeds of *hadga* (*Sesbania grandiflora*) and *pangára* (*Erythrina indica*), and from 4 to 6 feet apart single seeds of the *nimb* (*Melia Azadirachta*) are planted. In addition to these, the *popai* (*Carica Papaya*), singly, and plantains in pairs, are dotted about, according to the amount of shade required. These seeds are sown in the first week in June, and, after that, hand weeding and watering every eight days is all that is wanted up to the end of December, when the nurse trees are 18 inches to 2 feet high, or large enough for planting the vines. From the tops of the best ripened shoots, in the old plantations, 7-inch cuttings are taken. They are first made into small bundles, wrapped in plantain leaves, soaked in the water they have been accustomed to, carried to the new plantation, soaked in the new water, and all but the tips buried in the ground. For some time water is given daily, later on once in two days, and afterwards—except during the hot months, when it is given every other day—once in six days. From each unburied tip a shoot springs. When they are a few inches long the shoots are led up the stems of the nurse trees and lightly tied with strips of a dried sedge, so elastic that, without untying it, the pressure of the growing vine keeps it loose. When the vine has grown to the proper height it is turned back and trained down until it reaches the ground, where it is layered in the earth and again turned up. This is repeated until the tree stem is fully clothed with vines, when the whole is firmly tied with the dried reeds of the lavala grass. After this the management of the plantation closely resembles the cultivation of the grapevine in southern Europe. Leaf picking may be begun eighteen months after planting, but in the best gardens it is put off till the end of the second year. The leaves may be gathered green and ripened artificially, or they may be left to ripen on the vine, though this reduces their value. The leaf picker uses both hands, the thumb sheathed in sharp-edged, thimble-like plates, which nip the leaves clean off without wrenching the plant. The vine grower is either himself a leaf dealer or he sells his crop in bulk to a leaf dealer. At retail the leaves are sold at from 1 to 2 annas the hundred.

Thermo-regulator.—We have had inquiries about the thermo-regulator illustrated and described on page 81 of our current volume. The name of the maker (which was there omitted by oversight) is F. Schlesicky, of Frankfurt-on-Main. It was figured and described in *Neueste Erfindungen und Erfahrungen* (1892, page 11), but it is not stated there that it is patented. We presume it is. This can be easily ascertained by writing to a patent agency or to the maker.

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EDITORIAL.

THE publishers beg to announce that this number of the AMERICAN DRUGGIST is the last which will be issued by them, they having sold to the American Druggist Publishing Company, 143 Chambers street, all their right, title, and interest in and to the journal, together with the indebtedness to it for subscriptions unpaid at this time, and all indebtedness on account of advertising which may accrue after this date. The purchaser will complete all unexpired advertising contracts with the journal, and will send the numbers of the journal due to subscribers after this date.

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INTERNATIONAL CONGRESS FOR CHEMICAL NOMENCLATURE AT GENEVA.

DURING the last international exhibition held at Paris in 1889 a large number of chemists from all countries attended a congress convened for the purpose of reforming chemical nomenclature and rendering it uniform. Owing to want of time the congress did not reach any practical results, but appointed a French committee for the purpose of studying the subject and preparing a report which should serve as basis for the action of a subsequent congress. This committee, under the presidency of Prof. Friedel, and with the assistance of foreign chemists, having completed its labors, a new congress was called to assemble at Geneva, and the first meeting was held on April 19th of the current year.

The following chemists were present:

Austria: A. Lieben (Vienna); Z. H. Skraup (Gratz).

Belgium: M. de Lacre (Ghent).

England: H. E. Armstrong, J. H. Gladstone, W. Ramsay (London).

France: A. Arnaud, A. Béhal, L. Bouveault, A. Combes, Ch. Friedel, M. Hanriot, A. Le Bel, L. Maquenne (Paris); Barbier, P. Cazeneuve (Lyons); A. Haller (Nancy).

Germany: F. Tieman (Berlin); E. v. Meyer (Leipzig); E. Noelting (Mülhausen); E. Fischer (Würzburg).

Holland: A. P. N. Franchimont (Leyden).

Italy: E. Paternó (Palermo); Stan. Cannizzaro (Rome); A. Cossa, M. Fileti (Turin).

Roumania: C. Istrati (Bucharest).

Switzerland: R. Nietzki (Basle); Claparède, C. Graebe, Ph. A. Guye, D. Monnier, A. Pictet (Geneva); A. R. Hantzsch (Zurich).

It will be noticed that the number of representatives from Germany is unusually small, entirely out of proportion with the importance of the subject for German investigators, who have occasion, more frequently than those of any other nation, to coin new terms. England is also insufficiently represented, and the United States not at all. It is therefore to be feared that the peculiarities of the English language, so far as its adaptability to the proposed nomenclature is concerned, will not be sufficiently considered. It must be admitted, however, that the three English representatives are thoroughly competent to discuss questions which may arise.

The report, which the committee had prepared during the past three years, having been distributed, the congress commenced its discussion, and during the first two sessions (held on April 19th) adopted, among other rules, the following:

1. Alongside of the ordinary nomenclature, *official* names are to be introduced for the several compounds, so that each body may be easily found in any table or index.

The congress expresses the hope that authors may, in their writings, place the official name, in parenthesis, alongside of the ordinary or special name used by them to designate a compound.

2. All saturated hydrocarbons are to have names ending in *-an.*

3. The present names of the four lowest saturated hydrocarbons are retained:

Methan [CH_4; marsh gas; heretofore called "methane"].

Æthan [C_2H_6; heretofore "ethane"].

Propan [C_3H_8; heretofore "propane"].

Butan [C_4H_{10}; heretofore "butane," or "tetrane," or "quartane"].

For the hydrocarbons containing more than 4 atoms of carbon the Greek numerals are formed into names ending in *an-* [pentan, hexan, heptan, octan, etc.].

4. Hydrocarbons with side chains are regarded as derivatives of the normal chain. They are named after the longest normal chain or nucleus which their formula contains.

5. If a radical or residue enters a side chain the name of the former ends in *o*—for example, metho-, ætho-, instead of using methyl-, æthyl-.

If a radical or residue enters the main chain, however, the names ending in *-yl* (methyl, etc.) are used.

6. Those saturated hydrocarbons which form a closed chain receive the names of the corresponding saturated hydrocarbons (ending in *-an*) with the prefix *cyclo-;* for example, "cyclo-hexan."

This preliminary notice of the proceedings of the congress, which we have prepared after a report in the *Chemiker Zeitung* (No. 34), will suffice to show the object and scope of the proposed reformation. When the full report reaches us, and if there is a prospect that the recommendations of the committee will eventually be adopted, we shall communicate such further rules as will be of interest to our readers.

STANDARDIZING VOLUMETRIC SULPHURIC ACID.

ONE of our friends had occasion recently to try Weinig's method of standardizing volumetric sulphuric acid, which was described in our issue for May 1st, page 136, and, after several trials, has confirmed its accuracy. In his first experiments he found the weight of ammonium sulphate to diminish when the temperature was raised to between 105° and 110° C., and again to diminish somewhat when the temperature was between 115° and 120° C. On more carefully repeating his experiments, however, he found that the loss of weight by drying the salt at 115° C. during thirty minutes was so small that it would not affect the results, being only about 0.033 per cent.

Our own experience confirms this. We find that when ammonium sulphate is heated for a protracted period at about 110° C. (235° F.), there is a constant though only small loss, evidently due to slow volatilization. Thus we obtained the following data, for instance:

Amount of ammonium sulphate, dried at 100° C. during two hours: 2.9773 Gm. This again dried during five hours at 105° C.: 2.9741 Gm. Again dried during half an hour at 110° C.: 2.9738 Gm. Again dried during eighteen hours (from 3 P.M. to 9 A.M.) at 107.2° C.: 2.9607.

It follows that the drying should not exceed half an hour. Indeed, it will probably be best to dry first at 100° C. during half an hour or an hour, and then at 105° C. during about fifteen minutes.

This expeditious method of fixing the standard of volumetric sulphuric acid certainly deserves attention, and, if further critical trials of it confirm our present impression, will render its gravimetric valuation by a soluble barium salt unnecessary.

Prof. August Wilhelm Hofmann, of the University of Berlin, died suddenly on May 5th, at the age of 73 years. His death removes another one of the illustrious founders of the modern school of chemistry. He was born at Giessen on April 8th, 1818, devoted himself at first to modern linguistics and the study of law, but afterwards was attracted by chemistry, chiefly through the influence of Liebig, whose pupil he became, and whose assistant he remained up to the year 1845. He then established himself as lecturer at the University of Bonn, but the following year received a call to the newly-erected school of chemistry at London, which under his direction made such progress that it was united by the Government with the Royal School of Mines (in 1851). He served on many important Governmental expert commissions, during 1856–65 held the office of warden of the mint, and in 1861 was elected president of the London Chemical Society. In 1863 he received a call first to the University of Bonn, which he accepted, and where his first task was to design a new chemical laboratory. Before its completion, however, he was called to the University of Berlin as successor to Mitscherlich, one of his first duties here again being to superintend the building of a new chemical laboratory. In 1868 he founded the German Chemical Society, the success of which has been phenomenal, and whose presiding officer he has been at various times. It is unnecessary to enumerate all the honors and distinctions which fell to his share.

Prof. Hofmann's principal lifework was the development of various departments of organic chemistry, more particularly that of the aniline derivatives and coal-tar colors especially. He had, already in 1858, discovered a crimson coloring matter, produced by the action of chloride of carbon upon aniline, and while studying the nature of "fuchsin," discovered its essential constituent rosaniline and the conditions under which the coloring matter was produced. This led to the investigation and discovery of numerous other important coal-tar colors (Hofmann's violet, aniline green, etc., etc.), as well as to the development of a new theory of ammonia derivatives by substitution. His method of teaching the fundamental laws of chemistry according to modern views, illustrated by apparatus specially designed to demonstrate the most important of them (known as "Hof-

mann's apparatus"), was adopted and followed by chemists everywhere. His scientific papers and contributions have been exceedingly numerous, nearly all of them adding new discoveries and facts to our stock of knowledge. As a lecturer, investigator, experimenter, and practical teacher in the laboratory he scarcely had an equal. His pupils, numbered by thousands, are to be found in all parts of the civilized world, and many of them have themselves risen to prominence and are proud to ascribe a material part of their success to his teaching. His loss is one of the most serious which the University of Berlin has suffered for some time.

NEWS AND NOTES.

ENGLAND.

THE Pharmaceutical Society, after much deliberation, has determined to institute a new order of merit. Reference has already been made in this column to the ill-starred suggestion that research workers should be labelled by the Society "Discoverers in Pharmacy." The title was so singularly infelicitous that it needed no prophetic vision to announce that it would be speedily dropped. This has happened, but as the necessity still existed of attracting workers to the Research Laboratory, and as the committee apparently imagine that such a bait is required, a more euphonious title has been approved. In future the title of Research Fellow of the Pharmaceutical Society will indicate that the holder has worked for at least a session in the Research Laboratory, or a similar institution elsewhere, and has conducted a research of importance to pharmacy unaided. Besides this he must hold the certificates of being a pharmaceutical chemist and member of the Society. Theoretically it might be inferred that a high standard of excellence has been instituted, but practically it is anticipated that the portals will be considerably enlarged or the results will be nil. It is a fact beyond dispute that during the three years of its existence the Laboratory has attracted none but the youngest in pharmacy, and one or two analytical chemists who were awaiting appointments. It is not surprising, therefore, that no work has been done which could claim to be the unaided research of its author, except by the one or two who were not pharmacists.

There are quite a number in pharmacy who will regret to see the title "Fellow of the Pharmaceutical Society" retained for the above object alone. Two suggestions had been made, either of which would have made it a more coveted distinction than it will ever be if it is restricted in the manner proposed. It was proposed to abolish the lower title of associate and confer the membership on all who have passed the qualifying examination. This will probably be carried into effect to a partial extent by making all the associates who are in business for themselves members. As a continuation of the scheme it was suggested that all pharmaceutical chemists, viz., those who had passed the highest examination, should be made Fellows at the same time. The other scheme left the relation of associates and members as they are, but suggested a higher grade of pharmaceutical chemists to whom the title of Fellow should be awarded upon the production of sufficiently meritorious research work. It is evident that the new institution materially affects both of these schemes adversely.

Considerable attention has been directed by the Royal Commission on Labor to the conditions under which the men work in chemical manufactories. Some startling evidence has recently been given as to the dangers in the alkali and bleaching powder industries. It has been affirmed that it is absolutely necessary for the men engaged in certain operations, such as filling the casks with bleaching powder, to wear thick flannel respirators and special goggles. The respirators—or as the men call them, muzzles—are made of numerous folds of stout flannel, and are 6 or 8 inches thick. Even with these protections the vapor is so caustic and deleterious that it is usually impossible to work for more than an hour without having to go outside to get a breath of fresh air. Some of the workers adopt further precautions by saturating their nostrils and eyelids with olive oil. The result is that, in spite of every care, fumes are often inhaled, and the men, half-asphyxiated, have recourse to stimulants, such as whiskey or rum, which leads to grave intemperance. Messrs. Brunner, Mond & Co., one of the largest alkali manufacturers, have adopted the eight-hour day by working three shifts of eight hours each per diem. As this company recently paid a dividend of 50 per cent upon its ordinary shares, it is argued that the eight-hour day might be conceded in every chemical factory. This argument is very specious, as the extraordinary dividends of this company depend, it will be remembered, upon the fact that their alkali is produced by the ammonia-soda system, and at a much cheaper rate than the soda-ash process. Moreover, the amalgamation of all the older alkali manufacturers under the name of the United Alkali Company has resulted in a considerable advance in value of all their products, by which advance the Brunner-Mond Company have also profited.

The present position of quicksilver in the chemical market is both interesting and instructive. Since September, 1890, the value has steadily fallen from 50 cents per pound to 33 cents. For some years (Messrs. Gehe state) it has been customary to attribute the depression to over-production in America. Now it is clear that California produces less year by year, and it appears possible that the principal mine, New Almaden, may soon be abandoned. The chief production, outside of Spain, is Tuscany, which of late years has considerably increased its output. The new Russian mine sends most to Northern Germany, and its influence is quite unfelt on the English market. The more modern use of silver instead of mercury for the preparation of mirrors accounts in some degree for the decrease in the use of quicksilver. But perhaps the chief reason for its present depression is the action of the Rothschilds, who control the Spanish supply. It is well known that the Spanish Government mortgaged the whole of their production to the Rothschilds for fifteen years, which term expires this year. Messrs. Gehe pertinently suggest that the bearing tendency of the market is due to the clever action of the noted financiers, with a view to obtain more favorable terms in renewing the contract.

Mr. S. M. Burroughs, of the firm of Burroughs, Wellcome & Co., the Anglo-American wholesale chemists and introducers of Messrs. Wyeth's and other American specialties, has sent some highly descriptive letters home of his journeys in the East. Passing through France and Italy, Mr. Burroughs has visited Egypt, in each country paying special attention to the English and American chemists. Mr. Burroughs has recently taken out letters of naturalization, and so it is not so surprising to find in each of his communications strongly unfavorable remarks upon the tariffs and duties levied in the various countries. Discussing a question raised by Sir Edgar Vincent in the *Times*, that consuls and agents should be paid commissions on the amount of the business done with England, instead of salaries, Mr. Burroughs is of opinion that even then they would not work harder in the interests of traders than they do now. This is intended as a high compliment, because he adds that everywhere that he has been he has received from both English and American consuls every possible assistance. There are various officers here, however, engaged in the Board of Trade, Inland Revenue, or Foreign Office, upon whom such an innovation might well be tried. The lofty superiority of officialism to trade questions is often exasperating, and even the weight of the London Chamber of Commerce is unable to influence them or obtain proper inquiry and investigation.

London Market Report.

MINCING LANE, May 13th, 1892.

There has been only a moderate amount of business done during the last month, and prices in many instances have given way somewhat. An increase in the value of phosphorus has caused a corresponding increase in phosphoric acid, phosphates, and hypophosphites. Chlorate of potash is firm at the higher rate and will probably go higher. The action of the Union in reducing the number of bichromate of potash works has already resulted in higher prices for this article. Opium at its present ab-

normally low price has attracted some attention, many firms being convinced that bottom prices have been reached and that it is a good time to stock. Following are current prices:

Acid, Citric	per lb.,	$0.35	Kola Nuts	per lb.,	$0.12
Tartaric	"	.23	Mercury	"	.34
Bleaching Powder	per cwt.,	2.06	Calomel	"	.62
Antimony, crude	"	5.76	Corrosive	"	.56
Borax	"	7.00	Opium	"	1.54
Buchu Leaves	per lb.,	.08	Potassium Bichrom.	"	.09
Camphor, refined	"	.34	Chlorate	"	.14
Cascara	"	.06	Phosphorus	"	.51
Cream of Tartar	"	.20	Shellac TN	"	.18
Cubebs	"	.40	Soda, Bicarb	per cwt.,	1.74
Ergot	"	.54	Caustic	"	2.48
Ipecacuanha	"	1.72	Crystals	"	.87
Jalap	"	.28	Hyposulphite	"	2.16

NEW ENGLAND.

THE Commissioners of Pharmacy for the State of Maine report that they received 44 applicants for registry and certificate during the past year. Of these 1 was registered under the provisions of section 8 of the act. Two were partially examined but failed to complete their examination. Ten, including the 2 just mentioned, were unsuccessful. The remainder, 32 in number, passed successfully, and have all been registered and received their certificates. Of those who were examined the averages of 2 were 25.5 per cent on the question paper and the oral; 2 were 43.32; 4 were 55.02; 5 were 65.54; 14 were 73.91; 12 were 84.28; 2 were 90.22.

Of the foregoing those below 65 per cent were unsuccessful. The Commissioners have decided on requiring 75 per cent the coming year. It is very probable that this decision will very materially diminish the prospective number of applicants, as the boys will regard it, perhaps, in the light of requiring "bricks without straw." The foregoing tabular statement shows that a majority of them have attained, and even exceeded, the requirement of the past twelve months. They are generally rather at sea on the questions in the metric system, and one of them rather amused the examiner, who inquired how much salt it would take to make a litre of solution of the strength of 1 Cgm. to 1 Cc., by informing him that "salt would not dissolve in a centimetre." Curious misconceptions occur frequently, and in some of the best written examinations.

Great difficulty was incurred in formulating questions adaptable to the examinations of applicants who had no instruction beyond that derived from shop practice, and with little or no guidance in preparatory studies. The Commissioners in their report refer to this subject in the following terms: "Ever since the Commission was created the need of two things has been forced upon the attention of the Board, or, rather, one thing in two aspects: first, a course of questions limited in its range, yet sufficiently wide to give a course of reading, and a choice of subjects for examination which should not claim intending applicants as being apparently without end; and, secondly, which should furnish a sufficient variety of questions for examination, without any two of them having the same set of questions to answer. Of course these questions should be printed and placed in the hands of those intending to appear before the Board, to be studied, so that 75 or 80 per cent of them can be answered completely and correctly. . . . Now, in Prof. Remington's 'Pharmacy,' second edition, there are over 5,000 questions, and in Prof. Attfield's 'Chemistry' there are over 1,000, and when we come to reckon on those that might be asked from the Pharmacopœia, we have a list that looks rather discouraging. It would be easier for formulating questions if we could place in the hands of students for their consideration the questions they are expected to answer, without their knowing beforehand what they will be asked."

Only two violations of the Pharmacy Act were reported to the Board, and in these cases but little evidence with which the county attorney could go before the court was presented. The Maine law is entitled "An Act to Prevent Incompetent Persons from Conducting the Business of Apothecaries." Sections 2 and 3 define the term and duties of the Board. The concluding clause in Section 4 is as follows: "And any physician who has a diploma as a graduate of a duly established medical college in the United States, and in active practice, may do the business of an apothecary without being registered." The Board comments on this portion of the statute in the following manner: "This clause was the subject of severe censure by a correspondent of the secretary, and the principle involved in this clause was sharply criticised by several pharmaceutical journals of the highest character, without particular reference to the Pharmacy Act of Maine; and it was a source of disappointment to the Board that the Judiciary Committee declined to report the repeal of that clause, as was requested in our last report; whether they knew the reasons therein urged in favor of the repeal, we have not learned, but we are of opinion that physicians who conduct drug stores should at least be required to report the same to the Board under penalty for refusal or neglect. This refers to all who are now conducting drug stores or who shall hereafter undertake the business. One physician set a good example to his brethren in not fearing to face the Board, but appeared and was examined and registered."

Section 5 of the law places the cost of examination at $10. In case the applicant is unsuccessful he has the privilege of being examined again after an interval of two months, and within twelve months of his first examination. Section 6 authorizes the Board to issue certificates of two grades, the first giving the possessor the right to conduct the apothecary business; the second declares "that the holder is a qualified assistant, and is competent to take charge of the business of an apothecary during the temporary absence of his employer, and the fee for such assistant's examination shall be $5."

The penalties for carrying on the business contrary to the provisions of this act are "$50 per month for the first offence, and $100 per month for each and every subsequent offence, whether for continuance in said business, or engaging anew therein in violation of the provisions of this act."

Section 13 gives any person the right to carry on the drug business without a certificate, provided a qualified assistant is employed in the store.

The Commission is made up as follows: Frank R. Partridge, Edward H. Thompson, and Henry T. Cummings. Mr. Cummings is the secretary of the Board.

THE question of licensing or not licensing druggists in Massachusetts is still agitating the minds of people in many towns and cities in the State. The no-license people of Worcester are stirred up over the question of druggists' licenses. There is now no place in the city where liquor may be legally purchased for any purpose. The aldermen take the ground that to license all who apply for druggists' licenses would practically mean free rum, and they say they cannot discriminate without giving somebody a valuable monopoly and injuring others equally worthy. The local clergymen met recently to consider the matter. The general sentiment seems to be that unless one or more druggists are licensed to sell for medicinal and mechanical purposes, the city will go for license next December, as it did two years ago after a year of no license. Some of the ministers wanted one druggist licensed in each ward; others wanted only three in the whole city. Resolutions embodying these propositions were offered, but were finally tabled for three weeks, to await the report of a committee of the most prominent clergymen in the city.

CHARLES FOSTER, alias "Dutchy" de Grow, for assault with a dangerous weapon upon a South Boston drug clerk, has been sentenced to State prison for five years.

The selectmen of Revere held a meeting on May 4th and voted to grant no druggists' licenses. There is a division of opinion among all classes of citizens in the town, and it is likely that a public hearing will be held on the matter soon.

Registered drug clerks are in great demand in Massachusetts.

SWETT'S PHARMACY, on Tremont street, has a new soda fountain of the Low Art Tile Company's manufacture.

The Uxbridge board of selectmen has voted not to grant any druggists' licenses this year.

The Biddeford, Maine, drug clerks recently arrested on charges of a single sale of liquor, on evidence furnished by Good Templars, are being served with warrants charging them with maintaining nuisances. The matter will come before the grand jury.

The druggists and doctors of Dorchester have organized a baseball team. Josh. Phillips is manager.

H. M. GEORGE, of Hyde Park, has received a sixth-class license.

Now that the college term is ended, PROF. PATCH will devote his whole time to the "E. L. Patch Laboratory Company." The business of this company has increased so rapidly that the laboratory has had to be enlarged twice.

The selectmen of Leominster, a no-license town, have granted three druggists' licenses, stipulating expressly that only pure liquors of standard quality shall be sold.

The State Board of Registration in Pharmacy held sessions May 3d, 4th, 5th; examined 44 candidates, and passed 12, as follows: Irving W. Slack, of Somerville; Eugene G. Crockett, of Lowell; Frank C. Haggard, of Holyoke; Alfred F. Dewing, of North Brookfield; George H. Salie, of Lynn; Theo. F. Rice, of Fitchburg; Lewis F. Baker, of Wollaston; Thomas J. Hartnett, of Holyoke; John R. Hudson, of Watertown; Joseph E. Harrity, of Clinton; Edwin H. Wells, of Boston; William S. Stevens, of Worcester.

The board of aldermen of Fitchburg, on the evening of May 3d, reported in favor of licensing 11 druggists. Henry F. Rockwell, Henry F. Boutwell, Frank S. Stone, A. H. Burgess, J. P. Derby, H. G. Greene, H. A. Esterbrook, D. H. Joel, F. H. Fenwick, Harvey S. Page, T. S. Malone are the lucky men.

FRANK A. DAVIDSON, Ph.G., was in New York recently on business connected with the Theodore Metcalf Company.

GOODWIN & HIGLEY, of Woburn, Mass., have applied to the selectmen for a druggist's license.

PRESIDENT WILBUR L. SCOVILLE of the Alumni Association of the Massachusetts College of Pharmacy proposes to hold meetings of the association throughout the coming year, and he is already perfecting plans for the winter meetings.

Malden's board of aldermen has granted sixth-class licenses to 19 applicants. The petition of D. W. Kelley was not reported on.

PROF. GEO. F. H. MARKOE and family will spend the summer at Hull, Mass.

All the applications for druggists' licenses at Cambridge were granted.

PRESIDENT WILLIAM W. BARTLET of the Massachusetts Druggists' Alliance reports many applications for membership.

The Braintree selectmen have issued a sixth-class license to FRANK H. SMITH.

A powerful horse dashing through a plate-glass window was the unusual scene which frightened the shoppers on Temple place on the morning of May 11th. Several persons tried to stop him, but their efforts, joined to those of several vehicles which blocked the way, caused him to swerve from the wagon track and take to the sidewalk. The momentum of this movement precipitated the animal half-way through the window of the drugstore of Melvin & Badger, 43 Temple place, and the wagon came pretty near following the horse. Luckily no one was injured by the horse's escapade, although several passers-by had narrow escapes. The horse suffered severely from the broken glass of the window through which he did his circus act.

Haverhill's board of aldermen held a long session on the night of May 5th. The leading business was the action on the druggists' licenses. A majority of the committee on licenses opposed the granting of any licenses, while the minority report favored the granting of some. Twenty-eight applications were before the board, and, after an hour's deliberation, the board voted to grant nine of them, laying over eighteen, which is supposed to be equal to a refusal. The following are the successful applicants: Fred. E. Stevens, H. C. Toupin, R. C. Howe, T. H. Bailey, C. B. Emerson, L. P. A. Dorin, G. B. Holden, F. C. Swan, J. B. Simas, and C. H. Woodman.

The Massachusetts State Board of Health will soon move its laboratory to 994 Washington street. Dr. Charles P. Worcester, the analyst for the board, has been using one of the rooms at the Harvard Medical School for a laboratory. When the addition to the State House is completed the laboratory will be located there.

The board of selectmen of Whitman held a special meeting on the evening of May 12th for the purpose of considering the question of granting licenses to the druggists. They decided not to issue any licenses at present.

The following are the delegates from the Massachusetts State Pharmaceutical Association to the A. P. A. meeting: H. A. Estabrook, Frederick Baily, W. W. Bartlet, J. Allen Rice, and F. M. Pease. The Massachusetts College of Pharmacy will be represented at this meeting by Wm. C. Durkee, Wm. F. Sawyer, Wm. W. Bartlet, Elie H. La Pierre, and Max Cramer.

The selectmen of both Attleboros gave a public hearing on May 13th regarding the granting of druggists' licenses. The applicant at North Attleboro was Patrick Donahae, of Milford. His application was promptly rejected. The local board heard considerable evidence, pro and con, and finally granted licenses to H. P. Mead, S. P. Clark, and M. S. Mead.

JAMES J. CURRAN, of Holyoke, who has been chosen delegate-at-large to the National Democratic Convention from the 1st district, is a druggist in the Paper City. He is 30 years old, and has lived in Holyoke most of his life. He was educated in the public schools and Holy Cross College at Worcester. He has represented Ward 3 in the board of aldermen, and has served two years as water commissioner.

GEO. E. FAIRBANKS, one of the principal druggists of Worcester, was raided by the police on May 16th and about one hundred and twenty dozen of Bass' ale, export lager, porter, and other malt liquors seized. Other liquors found on the premises, like rock and rye, whiskey and brandy in bottles, etc., which the officers said were liable to seizure, were, however, not taken. Mr. Fairbanks says that the seized liquor has been in stock for some months—some of it for years—and that he has made no sales since the 1st of May, the beginning of the no-license year. He was intending to store it during the no-license year, but had not yet had time to do so. Mr. Fairbanks will take legal advice, and denounces the raid as a steal.

JOSEPH H. PLUNKETT, of 1951 Washington street, has sold his store to Cherry & Wingate.

The selectmen of Amesbury have voted to grant but one druggist's license, and all of the seven druggists in town have signed an agreement not to accept that one, but to demand that all be used alike.

GEORGE A. HAMILTON, a drug clerk employed by Simard & Co., North Adams, Mass., took an accidental overdose of chloral and died May 16th.

It has just become known that the samples of liquor which the committee of the Biddeford (Maine) Good Templars purchased at the local drug stores have been stolen and cannot be produced as evidence.

The class of '91, M. C. P., dined at Young's Hotel on the evening of May 25th, and then adjourned to the graduation exercises at Association Hall.

By a vote of four to three the Marlboro aldermen have decided to issue no druggists' or sixth-class licenses this year.

ERNEST L. VAUGHN, of Lowell, is a defendant in a $20,000 breach of promise suit.

C. S. JOSLIN, of North Attleboro, made a voluntary assignment on May 17th. An exact statement of his affairs has not been given, but it is acknowledged that the assets are very light and the liabilities heavy. Mr. Joslin was one of the druggists who was refused a liquor license. At the Superior Court he was also convicted of illegal sell-

ing, and selling to minors, and was sentenced to six months' imprisonment. He appealed.

The graduation exercises of the class of '92, Massachusetts College of Pharmacy, took place at Association Hall, corner of Berkeley and Boylston streets, on the evening of May 25th. There was a large attendance of friends of the college and of the members of the class. The annual address was delivered by Prof. Edgar L. Patch; Mr. Charles W. Perkins was the salutatorian of his class; Dr. Robert W. Greenleaf delivered the valedictory for the Faculty, and Mr. Gilman E. Thomas was the class valedictorian. Appended is a list of the twenty-six graduates: J. S. Bonney, F. H. Carver, I. E. Clark, J. M. Cobe, F. S. Colley, H. E. Culverhouse, H. L. Emerson, F. N. Fish, W. H. Glover, F. W. Goodall, M. C. Groll, Wm. Hobbs, A. T. Holley, S. W. Libby, A. L. Newhall, C. H. Packard, C. W. Perkins, L. F. Porter, J. A. Richardson, J. W. Sargent, L. Simcox, W. H. Strong, Geo. E. Thomas, P. B. Thompson, A. J. Travis, Agnes Wilbur.

NOBLE C. EARL, of Portland, is to succeed H. J. Cummings on the State Board of Pharmacy of Maine.

A bulletin of the management of the eighteenth exhibition of the Massachusetts Charitable Mechanic Association, to be held in Boston in October and November next, has just been issued, signed by the president of the association, Mr. O. M. Wentworth, and Mr. Henry A. Dupee, the officer in charge of group 16, which comprises exhibits of chemicals, dye stuffs, medicines, etc. The bulletin states that in accordance with a vote of the board of managers, passed April 27th, 1892, the manufacturers of chemicals and dye stuffs are invited to contribute specimens of their products for a chemical museum, to be established at the Institute of Technology, Boston. The specimens so contributed are to be first exhibited in the coming exhibition, and certain information is given to those who are not acquainted with the aims and purposes of the institute. Contributors are requested to conform to the following:

1. Send only specimens of your own manufacture, or the crude materials entering into their composition. Crude materials accompanying the finished products are particularly desired.

2. Label each specimen with its scientific name, and its popular one also if you desire.

Name of manufacturer should be on each specimen, and, if convenient, the words, "Presented to the Massachusetts Institute of Technology, Boston, December, 1892."

3. The association will furnish cases for the exhibits, free of charge, and the specimens will be arranged by students of the institute; but if parties prefer to furnish cases and arrange their own exhibits, they will be permitted to do so.

4. Contributions should be shipped so as to reach Boston not later than September 20th, freight prepaid by sender, directed to "Massachusetts Charitable Mechanic Association, Huntington avenue, group 16, Boston, Mass."

ST. LOUIS.

St. Louis College of Pharmacy.—At the annual meeting held March 28th, the following officers were elected: President, H. E. Hoelke; vice-president, Edmund P. Walsh; treasurer, Solomon Boehm; secretary, Dr. John C. Falk; corresponding secretary, G. H. Chas. Klie; board of trustees, Henry Braun, Henry W. Scheffer, H. Frielingsdorf, Charles Gietner, H. F. A. Spilker, and Adolphus Braun.

Several amendments to the constitution were offered. According to the rules they will lay over one year.

The year just closed has been one of the most prosperous in the existence of the college. The course of 1892-3 will be opened in the new building on Lucas place. The excavations and foundation walls are finished, and the superstructure will be both handsome and commodious.

The commencement of the college was held March 31st, 1892. The graduating class numbered 47, as follows: Frank H. Ameling, St. Louis; Wm. F. Angermüller, St. Louis; Samuel Ernest Barber, Shubuta, Miss.; William Baron, St. Louis; Emil C. Behrens, Carlenville, Ill.; Charles E. Bennett, Corpus Christi, Texas; Augusta A. Bock, Smithton, Ill.; Jerome C. Carr, Du Quoin, Ill.; Arthur L. Cason, Montgomery City, Mo.; William C. Divmeyer, Bucyrus, O.; Robert A. Doyle, East Prairie, Mo.; Elbert Dunlap, Miami, Mo.; Louis A. Fischer, St. Louis; Fred. H. Fricke, St. Louis; Herman G. Fritz, Staunton, Ill.; Charles F. Geiger, Boonville, Mo.; Wm. C. Haman, Cape Girardeau, Mo.; Max P. Heinrich, Cuero, Texas; Albert D. Horstman, St. Louis; William F. Ittner, Highland, Ill.; Henry Keim, Smithton, Ill.; Joseph Kelley, Carterville, Ill.; Joseph F. Lager, St. Louis; Fred. R. Lehman, East St. Louis; William H. Lemmon, New Albany, Ind.; William F. Lindemann, St. Louis; Andrew S. Ludwig, Belleville, Ill.; William B. McDonald, Montreal, Canada; Robert F. Miller, St. Louis; Ambrose Müller, St. Louis; Sterling P. Randall, St. Louis; Edward B. Reed, Kirksville, Mo.; Edward C. Reisse, St. Louis; Carl M. Renkert, Memphis, Tenn.; John F. Renter, Nashville, Ill.; John Riemann, Trenton, Ill.; Nathan Sänger, St. Louis; Edward W. Sasse, Brunswick, Mo.; Ernst Louis Semsrott, Bremen, Germany; Charles F. Soldan, Jr., Macon, Mo.; Charles E. F. Streutker, St. Louis; John H. A. Temm, St. Louis; Louis W. Temm, St. Louis; Charles R. Trickey, Cape Girardeau, Mo.; Frederick O. Voss, Leavenworth, Kan.; Ernst A. Winkelmann, St. Louis; Theodore M. Young, St. Louis.

PRIZES: *Senior Class.*—The alumni gold medal was awarded to Wm. H. Lemmon, New Albany, Ind.

The college silver medal was awarded to Augusta A. Bock, Smithton, Ill.

The Oldberg-Wall prize was awarded to Chas. F. Geiger, Boonville, Mo.

The prize for the best examination in pharmacy was awarded to Wm. F. Angermüller, St. Louis.

The prize for the best examination in practical pharmacy was awarded to Messrs. Ambrose Müller, of St. Louis, and Wm. B. McDonald, Montreal, Canada.

The prize for the best examination in practical chemistry was given to Chas. F. Soldan, Jr., Macon, Mo.

PRIZES: *Junior Class.*—The college and alumni prize for the best examination in all branches was conferred upon George C. Boyd, Blandville, Ky.

Prof. O. A. Wall, M.D., Ph.G., delivered the valedictory of the faculty, and Sterling P. Randall, Ph.G., on behalf of the class. Memorial Hall was crowded to its utmost capacity. "No flowers" was printed at the bottom of the invitation cards, and was commendably observed.

The St. Louis Apothecaries' Association held its annual meeting on Wednesday, May 4th, 1892, at the St. Louis College of Pharmacy. Despite predictions of its early demise, it has entered the second year of its existence and efforts to fight the battle of fair prices and unadulterated drugs.

President Layton gave a brief report of the work of the executive committee for the year.

Treasurer Claus reported receipts up to date of $1,004. Balance on hand, $268.31.

Of several amendments to the constitution presented, one provides for an increase of the executive committee to seven members; division of the city into four districts, each to have a member of the committee as chairman.

Another amendment would increase the annual dues from one to two dollars. Both come before the next stated meeting for decision.

In reply to the question of Mr. Hassebrock, "Where does the cutter get his goods?" President Layton answered: "If you will wait just a little while longer I will let you know."

The committee to obtain a legal opinion concerning the anti-trust laws reported that action had been postponed.

Theodore Ilg, chairman of the committee on National Formulary of the U. S. P. A., asked members to co-operate with him in making a display of National Formulary preparations before the St. Louis Medical Association and the State meeting at Excelsior Springs. The Association indorsed the movement heartily and promised co-operation.

Mr. Hassebrock stated that some articles on the "price list" were considered toilet articles by some members and sold at cut prices, whereupon a motion was unanimously adopted declaring all articles on the list salable at list prices.

The election of officers resulted as follows: President, Thomas Layton; vice-president, W. C. Bolm; secretary, G. H. Chas. Klie; treasurer, Otto Claus; executive committee, H. F. Hassebrock, L. E. Frost, F. H. Swift, L. F. Waibel.

The Association decided to present President Layton with a token of esteem for labor well and faithfully performed. Messrs. Bolm and Alexander were appointed a committee to carry this into effect, and a sum not to exceed $150 was appropriated for the purpose.

President Francis Hemm of the Missouri State Pharmaceutical Association extended a most cordial invitation to all members to attend the coming meeting at Excelsior Springs on June 14th to 17th. He stated that the various programmes would contain a variety of new and excellent features, and especially referred to the entertainment programme, which would offer prizes of the value of about $1,000. The meeting would undoubtedly be a grand affair, and he would like to see every St. Louis druggist, cutters and all, there.

A motion was adopted that an assessment of one dollar *per capita* be levied and collected besides one dollar annual dues.

A vote of thanks was tendered the St. Louis College of Pharmacy for the privilege of meeting in the college, and the Association then adjourned to meet on the first Wednesday in August.

G. H. CHAS. KLIE,
Secretary.

FLORIDA.

THE sixth annual convention of the State Pharmaceutical Association was held on April 12th and 13th at the Alcazar Hotel, in St. Augustine, and Rev. John L. Pitner delivered a humorous address of welcome.

The secretary, Mr. S. P. Watson, in view of his contemplated removal to Atlanta, and that he would be compelled to resign his office at the end of the present meeting, moved that the rules be suspended and Mr. W. H. Lightstone be elected secretary, his term of office to commence at the close of this meeting. Mr. Lightstone was unanimously elected and a vote of thanks tendered the retiring secretary for the able, faithful, and untiring service he had rendered the Association during his five years in office.

Dr. A. E. Philips then read an annual address of exceptional excellence.

The following new members were elected: W. E. Spruill, Jr., and N. M. Thornton, of Jacksonville; George A. Alba and Eugene Seguir, of St. Augustine; G. R. Plummer, of Key West; E. Berger, of Tampa; F. E. Reeder, of Welaka; S. H. White, of Brooksville; W. P. Talmage, of Bartow; Wm. G. Aldridge, of Sanford; and J. L. B. Eager, M.D., of Winter Park.

A. E. Philips, H. C. Cushman, and W. A. Rawls were appointed a committee to provide for the proper representation of Florida pharmacists at the World's Congress in 1893, and were requested to report their action at the Pensacola meeting.

Two papers were entered in competition and the prize was offered to Dr. Philips the title to his essay being "The Threadbare Subject." Mr. H. C. Cushman's paper upon "Florida Phosphates" was probably the best yet written upon this subject, and Dr. Philips, after decision had been rendered in his favor, declared that Mr. Cushman's paper was the abler and should have had the prize, and therefore insisted upon dividing it with him.

After a protracted and general debate upon various defects of the "Pharmacy Law" the matter was disposed of by requesting the legislative committee to have the law so amended as to prohibit the sale of all drugs of every description (patent medicines alone excepted) by other than registered pharmacists, or under the immediate supervision of one; also, to obtain legislation permitting registered pharmacists to sell alcohol for medicinal and mechanical purposes only, without payment of license; also requiring every registered pharmacist to renew his certificate annually by payment of $1.00 to the treasurer of the Board of Pharmacy.

The treasurer of the Association was instructed to include in his next report the full names, address, and indebtedness of members who may then be two years or more delinquent in the payment of dues, to be published in the next report of proceedings.

The following were elected: President, N. Wooldrige, Jacksonville; 1st vice-president, T. E. B. Kernan, St. Augustine; 2d vice-president, W. M. Stewart, Palatka; 3d vice-president, T. S. Chalker, Lake City; secretary, W. H. Lightstone, Jacksonville; treasurer, Ed. Delouest, Ocala; local secretary, H. C. Cushman, Pensacola.

The standing committees: Executive—N. Webster, Jacksonville; H. C. Grove, Ocala; P. E. Hannah, Pensacola. Legislative—W. A. Rawls, Tallahassee; F. D. Ackerman, Palatka; A. E. Philips, Sanford; H. Robinson, Jacksonville; W. I. Woodman, St. Augustine. Trade Interests—W. A. Dell, Jacksonville; George A. Alba, St. Augustine; H. C. Hankins, Bartow; H. R. Benjamin, Tampa; Thomas Clark, Jacksonville. Papers and Queries—A. P. Fries, Jacksonville; F. E. Reeder, Welaka; D. G. Smith, Madison; R. J. Martinez, Jacksonville; F. P. McElroy, Dade City. Delegates to American Pharmaceutical Association—S. P. Watson, Jacksonville; Ed. Delouest, Ocala; L. S. Smith, St. Augustine; W. H. Lightstone, Jacksonville; T. G. Rawls, Tallahassee. Alternates—W. E. Spruill and G. W. Williams, Jacksonville; W. S. Turner, Tompkinsville; E. Berger, Tampa; W. L. Sessions, Live Oak.

Pensacola was selected as the place, and the second Wednesday in May, 1893, as the date for holding the next annual meeting.

The Board of Pharmacy held its annual meeting simultaneously with the State Association. Four candidates received certificates—W. E Spruill, Jacksonville; Eugene Seguir, St. Augustine; S. H. White, Brooksville; B. Lake Noyes, Dunnellon.

The board decided to hold its annual meetings hereafter at the same place with the F. S. P. A., but on the day immediately preceding; hence the next board meeting will be in Pensacola on the second Tuesday in May, 1893.

GEORGIA.

THE seventeenth annual meeting of the Georgia Pharmaceutical Association was called to order by President Slack in Masonic Hall at Columbus, Tuesday morning, May 3d, and opened with prayer by Rev. Dr. Robert Harris. Mayor J. J. Slade welcomed the Association to the hospitalities of the city in an appropriate address, which was responded to by Dr. S. C. Durban, of Augusta. President Slack then delivered the annual address, which was an interesting and thorough review of the Association for past year, and brief history of work it had accomplished in past seven years. He advised the Association to hold next annual meeting at some central point, and after first day's session adjourn, in a body, to meeting of American Pharmaceutical Association in Chicago and attend the World's Columbian Exposition. His advice was taken, and a committee, with D. W. Curry, of Rome, chairman, was appointed to secure railroad rates, hotel accommodations, etc. At evening session the following officers were elected: President, E. M. Wheat, Columbus; 1st vice-president, C. M. Crosby, Marietta; 2d vice-president, C. S. Bondurant, Thomasville; 3d vice-president, J. F. Miller, West Point; treasurer, M. H. Taylor, Macon; secretary, H. H. Arrington, Summerville. Able and interesting papers were submitted as follows: Jno. P. Turner, "Wine of Beef and Iron"; Harry Sharp, "Pharmacy: Its Lights and Shadows"; J. W. Goodwyn, "Medicated Waters"; Geo. F. Payne, "Tincture of Muriate of Iron"; C. M. Crosby, "Finances of Pharmacy"; Jno. P. Turner, "Fluid Extract of Cascara"; S. C. Durban, "What of our Association?" Report of Legislative Committee attracted special attention, and vote of thanks tendered not only to committee, but to Messrs. Sharp, Slack, and Payne for assistance rendered in bringing needed reforms to attention of the Legislature. The president appointed committee composed of C. S. Bondurant, C. M. Crosby, and J. P. Miller to draft suitable resolutions on death of J. W. Rankin, J. J. Crawford, and W. C. Russell, members of the Association. The following names were selected to be presented to the governor, one of which will be appointed to fill vacancy in State Board of Pharmacy, caused by expiration of term of Harry Sharp: Harry Sharp, Jno. P. Turner, T. F. Burbank, C. M. Crosby, P. R. Stauffacher. The Atlanta College of Pharmacy received the indorsement of the Asso-

ciation. On invitation of Dr. Wm. Bradford the Association decided to hold its next annual meeting in Rome, and Dr. Bradford was appointed local secretary. Third session, at 9 o'clock Wednesday morning: Delegates elected to International Pharmaceutical Congress, as follows: Theo. Schumann, chairman; S. C. Durban, S. C. Parsons, J. W. Goodwyn, and H. R. Slack. The following alternates were then elected: T. F. Burbank, C. M. Crosby, C. S. Bondurant, J. G. Polhill, Geo. F. Payne. At 3 o'clock P.M. the Association went in a body on steamer *Fannie Hearn* for excursion down the Chattahoochee. Fourth session called to order in the cabin at 4 o'clock, when retiring President Slack made an appropriate speech, praising the hospitality of citizens of Columbus and delivering the charter and gavel to newly-elected President Wheat, who accepted them, pledging himself to the trust with fitting and well-timed remarks. Dr. J. W. Goodwyn, Harry Sharp, C. M. Crosby, Theo. Schumann, Jno. P. Turner, and others were called upon and delivered short and witty impromptu speeches, which were loudly applauded. The Association then formally adjourned, to meet in Rome upon call of president and secretary. Thus closed the most pleasant and successful meeting in the history of the Association, there being 150 members present and 50 new ones admitted. At 6 o'clock all present were invited to partake of refreshments specially prepared for the occasion, and a magnificent feast it was. "'Mid the bountiful supply of delicacies and the flow of sparkling champagne" the cut-rate problem was entirely forgotten. After the banquet the tables were removed and dancing indulged in by younger members of Association and lady guests. The members returned to their homes praising the open-handed hospitality of local druggists and citizens of Columbus.

CINCINNATI.

THE twenty-first session of the Cincinnati College of Pharmacy concluded with the twentieth commencement, held on the evening of April 21st.

After an address on behalf of the board of trustees by Dr. Louis Schwab, one of the earliest students and graduates of the school, on behalf of the faculty, Prof. Fennel addressed the graduates and the audience, handling, among other subjects, that of pharmacy laws and examining boards.

The address of President Klayer concluded with the presentation of diplomas to twenty nine graduates.

The prizes—medals except the last one—were awarded to juniors: Henry Sudhoff, best general examination; John V. La Grange and Miss M. Knoll, botany; Frank H. Morgan, chemistry. And to graduates: Benj. H. Ewing, best general examination; Chas. C. White, theoretical chemistry, Miss A. L. Braunwarth, microscopy; Benj. H. Ewing, theoretical pharmacy; Benj. H. Ewing, practical pharmacy; Benj. H. Ewing, practical chemistry and best investigative work, a complete set of Roscoe & Schorlemmer's "Treatise on Chemistry."

After the close of the exercises the class was entertained at a supper, participated in by members of the college alumni, the faculty, and many invited guests.

The following theses, among those presented by applicants for graduation, will be sent to the next meeting of the American Pharmaceutical Association: "Antiseptic Dressings," Miss H. Lucas; "Calcium Lactophosphate and Syrup of Calcium"; "Lactophosphate," H. Aufnewasser; "Commercial Solution of Bimeconate of Morphine," with proposed formula for the solution, Miss Braunwarth; "Quantitative Estimation of Methyl Salicylate in Oil of Wintergreen and in Oil of Sweet Birch," with a test for these two oils, an assay for methyl salicylate, Benj. H. Ewing.

NEW YORK.

College of Pharmacy of the City of New York.—The commencement exercises terminating the sixty-second lecture season of this institution were held at Carnegie Hall on May 3d. President Samuel W. Fairchild presided. Prof. Charles F. Chandler, on behalf of the Examination Committee, read the roll of honor, comprising the following graduates standing highest in the class: Charles F. Pfister, Clifton, Kan.; Charles J. Leyes, New York, N. Y.; Wm. D. Utley, New York, N. Y.; S. Harper Folckemer, Springfield, O.; Wm. Petry, Newark, N. J.; Scudder J. Woolley, New York, N. Y.; Raphael Scherick, New York, N. Y.; Henry J. Fischer, New York, N. Y.; Leon H. French, Belfast, Me.; Henry F. Muer, Brooklyn, N. Y.; Pius Renn, New York, N. Y.; Demosthenes G. Constantin, Diarbekir, Turkey in Asia; Francis A. Lowe, Kansas City, Mo.

The alumni prizes, consisting of a gold, silver, and bronze medal, which are annually awarded to the students standing highest in the general examination, were presented by Mr. Alfred Storer, the president of the Alumni Association, to Messrs. Charles F. Pfister, Charles J. Leyes, and William D. Utley.

In addition to these prizes, the Alumni Association for the first time awarded prizes for the best record in the several quiz classes, as follows: Charles F. Pfister in chemistry, Charles J. Leyes in pharmacy, Scudder J. Woolley in materia medica.

The college prizes, amounting to $100 each, which are awarded to those who have not only attained a position on the roll of honor, but have undergone a special practical examination by the several professors, were bestowed as follows: By Prof. Arthur H. Elliott to William Petry, of Newark, N. J. (chemistry); by Prof. Virgil Coblentz to Leon Howard French, of Belfast, Me. (pharmacy); and by Prof. H. H. Rusby to Charles F. Pfister, of Clinton, Kansas (pharmacognosy).

The chairman of the graduating class, on behalf of the latter, presented to the president of the college the sum of $100, as a contribution towards the building fund.

The valedictory was delivered by Mr. Wm. D. Utley, and this was followed by an interesting address by the Rev. Charles H. Eaton.

The whole of the arrangements and all the execution of details, including the music (by Cappa's Seventh Regiment band) and distribution of flowers, reflected the greatest of credit upon the Commencement Committee.

The names of the graduates are:

Ambos, William, New York, N. Y.
Arndt, Frederick J. P., New York, N. Y.
Arteaga, Angel M., Puerto Principe, Cuba.
Bailey, James A., Sag Harbor, N. Y.
Bartholomew, Henry Smith, Whitehall, N. Y.
Beatty, John C., Hackettstown, N. J.
Becker, Martin Frank, Paterson, N. J.
Beitman, Emanuel, Washington, Ind.
Boettcher, Charles Frederick, Jersey City, N. J.
Borggreve, Frederick, New York, N. Y.
Breuer, Herman H., Brooklyn, N. Y.
Bruns, George, Brooklyn, N. Y.
Burke, Edward Maurice, New York, N. Y.
Carlisle, Franklin W., Mt. Vernon, N. Y.
Casazza, James P., New York, N. J.
Casey, Herbert W., Brooklyn, N. Y.
Chamberlin, Albert E., Brooklyn, N. Y.
Cochrane, Alex. Leo, Milford, Mass.
Cohn, J. James, New York, N. Y.
Constantin, Demosthenes G., Diarbekir, Turkey in Asia.
Crookshank, Frederick A., New York, N. Y.
Davis, Leo, South Norwalk, Conn.
Delson, John, New York, N. Y.
Denner, John C., New York, N. Y.
Doak, Joseph M., York, Neb.
Duble, Jesse Clyde, Williamsport, Pa.
Eisentraeger, Emil, New York, N. Y.
Eliseu, Frederick, New York, N. Y.
Engelhardt, William C., College Point, N. Y.
Feldmann, Max, Newark, N. J.
Ferris, George W., Franklinville, N. Y.
Ferry, Fairchild Nichols, Bethel, Conn.
Fischer, Henry J., New York, N. Y.
Fitz, Philip, Yonkers, N. Y.
Folckemer, S. Harper, Springfield, O.
French, Leon Howard, Belfast, Me.
Frischbier, Charles P., Brooklyn, N. Y.
Frohwein, Richard, Jr., Elizabeth, N. J.
Godfrey, Thomas Francis, Northampton, Mass.
Gordon, William S., Delphi, N. Y.
Gundlich, Charles, New York, N. Y.
Hahn, August, New York, N. Y.
Hall, Charles Henry, Fishkill-on-Hudson, N. Y.

Hegeman, Andrew E., Bath Beach, N. Y.
Hellstern, Rudolph F., Union Hill, N. J.
Herz, Pincus, New York, N. Y.
Higinbotham, Arthur, Guelph, Ontario, Canada.
Hitchcock, William R., Oneonta, N. Y.
Hitsch, Charles, New York, N. Y.
Hoefer, Ernest H., Newark, N. J.
Hoff, Alfred W., Keyport, N. J.
Hurt, William Fay, Marion, Ala.
Judd, Daniel E., Litchfield, Conn.
Keil, Nicholas P., Newark, N. J.
Kirk, James Trotter, West Point, Miss.
Klein, Edwin G., College Point, N. Y.
Know, Edwin H., Mt. Vernon, N. Y.
Lehman, Alfred, New York, N. Y.
Leyes, Charles John, New York, N. Y.
Lockwood, Sidney W., Sing Sing, N. Y.
Lowe, Francis A., Kansas City, Mo.
Lowerre, Eugene, Flushing, N. Y.
McKane, Sadie E., New York, N. Y.
Makholm, Jeppe C. M., Jersey City, N. J.
Mayer (Jesersky), Max, New York, N. Y.
Michaelian, Garabed, Harpout, Turkey in Asia.
Millener, William S., Jr., Spencerport, N. Y.
Muer, Henry F., Brooklyn, N. Y.
Noble, Frederick E., Belmont, N. Y.
Oats, Henry E., New York, N. Y.
Osseward, Cornelius, Kalamazoo, Mich.
Pastor, Leonard J., New York, N. Y.
Petry, William, Newark, N. J.
Pfister, Charles F., Clifton, Kan.
Renn, Pius, New York, N. Y.
Richart, William Rufus, Mansfield, O.
Roberts, Charles W., Hartford, Conn.
Roe, Robert A., Paterson, N. Y.
Roemer, John H., Fairmount, N. J.
Rolle, Arthur, New York, N. Y.
Rottenberg, Solomon, New York, N. Y.
Salmon, Harrie Glover, Peconic, N. Y.
Sayre, Theodore B., New York, N. Y.
Schaub, Frederick, South Norwalk, Conn.
Scherick, Raphael, New York, N. Y.
Schmidt, Hermann, Baltimore, Md.
Stephenson, John J., Jersey City, N. J.
Story, Frank R., Elizabeth, N. J.
Tucker, Thomas H., New York, N. Y.
Tynan, Francis J., Brooklyn, N. Y.
Utley, William D., New York, N. Y.
Vosseler, Theodore L. M., Brooklyn, N. Y.
Wasserscheid, August A., New York, N. Y.
Wickes, Benjamin C., Auburn, N. Y.
Wilken, Willy, New York, N. Y.
Williams, Frank B., Schuyler's Lake, N. Y.
Wilzin, Isaac M., Brooklyn, N. Y.
Wolff, John A., Orange, N. J.
Woolley, Scudder J., New York, N. Y.
Worthington, Arthur, Brooklyn, N. Y.
Yerdon, Charles F., Brooklyn, N. Y.
Zahn, P. E., New York, N. Y.

GENERAL.

Mr. G. H. King, Ph.D., of Belvidere, N. J., has been compelled by ill health to sell out his business to a new firm, Messrs. Beesley, Albertson & Belford. Dr. Beesley is a practising physician in the town, Dr. Albertson is a dentist, and Mr. Belford has of late been with Evans of Philadelphia. Mr. King is reported seriously ill, and it is doubtful if he ever is able to return to the duties of his profession again.

Dr. Samuel L. Foulk, of Scranton, will soon open a drug store in Stroudsburg, Pa., at his old stand, which has of late been occupied as a branch store by Mr. Lebor, who has removed stock to his main store and is making extensive improvements in the interior that will add greatly to its appearance and render it one of the most attractive stores in the place.

Mosher & Prendergast, Court street, Binghamton, N. Y., succeed R. W. Mosher.

W. H. Wolfe has purchased the interest of G. F. Whiting in Binghamton, N. Y. Mr. Wolfe clerked two or three years for J. W. Jansen there and subsequently for Mr. Whiting.

The Cortland Co. Druggists' Association held its regular annual meeting for election of officers May 19th. Mr. Fitz Boynton was elected president. There was a good attendance. A satisfactory report was made that no cutting was known to exist among the trade anywhere in the county.

The regular annual meeting of the Broome Co. Association was held in Binghamton, May 12th. Mr. C. L. Otis was again, for the ninth time, elected president. Satisfactory reports were made from all the towns of no cutting.

In the death of Mr. Paul H. White, of the firm of White & Humiston, at Owego, N. Y., May 20th, at the age of about 30 years, the drug trade has lost an able and active member. His death was due to typhoid fever of several weeks' duration. The burial was at Belfast, Me., his former home. He was unmarried, but has a mother and sisters living in Belfast. For several years he travelled for Henry Thayer & Co., Cambridgeport, Mass.; came to Owego six years ago, and had built up a prosperous and flourishing business by push and pluck, and wherever known he had many firm friends. The business will be continued for the present by his partner.

Pennsylvania Pharmacy Board.—The State Pharmaceutical Examining Board of Pennsylvania held an examination in the hall of the House of Representatives, at Harrisburg, on Monday, April 25th, 1892. Two hundred and twelve candidates appeared for examination, 151 applying for registered pharmacists' certificates, and 61 for qualified assistants' certificates. Seventy of the former and 29 of the latter class were successful.

The next examination will be held at Williamsport in July. Applicants for examination should apply to the secretary of the board, A. B. Burns, Montrose, Pa., after the middle of June, for the necessary blank form of application, and for the exact time and place of the examination.

Illinois Pharmaceutical Association.—The thirteenth annual meeting of this Association will be held June 7th, 8th, and 9th, in the Capitol at Springfield. All the railroads in the State have granted reduced rates (full fare going, one-third returning) upon presentation of certificate obtained at the starting point, countersigned by the local secretary, at Springfield. The first session begins Tuesday at 10 A.M.; Wednesday being entirely devoted to trade interests, with a final session on Thursday. The local committee has arranged an attractive programme, including a visit to the famous Lincoln Monument. Ample accommodations have been made for exhibits directly adjoining the meeting room, and intending exhibitors should communicate with Mr. Chas. Ryan, the local secretary, at Springfield. Every registered pharmacist in the State being a member, a large attendance is expected and a successful meeting anticipated. Reduced rates have been secured at the Leland Hotel of $2.50 and $3, and at the "St. Nicholas" of $2 per day.

C. S. Hallberg,
Secretary.

Occlusion of Hydrogen by Lead.—The result of a series of experiments conducted by J. Shields is the relegation of lead to that group of metals which do not occlude hydrogen. A consequence of this is the rejection of the hypothesis that hydrogen, being occluded by lead, plays an important part in the chemistry of secondary batteries. In a postscript the author points out that almost all substances possess the property of condensing gases and vapors on their surface, and "that no attempt has been made to show that *absolutely no hydrogen* is absorbed by lead," but that it practically occludes no hydrogen.—*Chemical News*, p. 196, and *Pharm. Journ.*

Ginseng Planting at Kew.—Efforts have been made at various times to establish the Corean ginseng plant at Kew. The Coreans, fearing invasion of their practical monopoly in the root, have been loath to part with seeds. Mr. Walter C. Hillier, Consul-General in Corea, has now sent a small packet of seeds obtained from the Government Gardens at Songdo. He says they are sown in the spring, in fine leaf mould, without manure. At the end of the first year the plants are set out, but it is five or six years before they reach maturity.—*Kew Bulletin*, April.